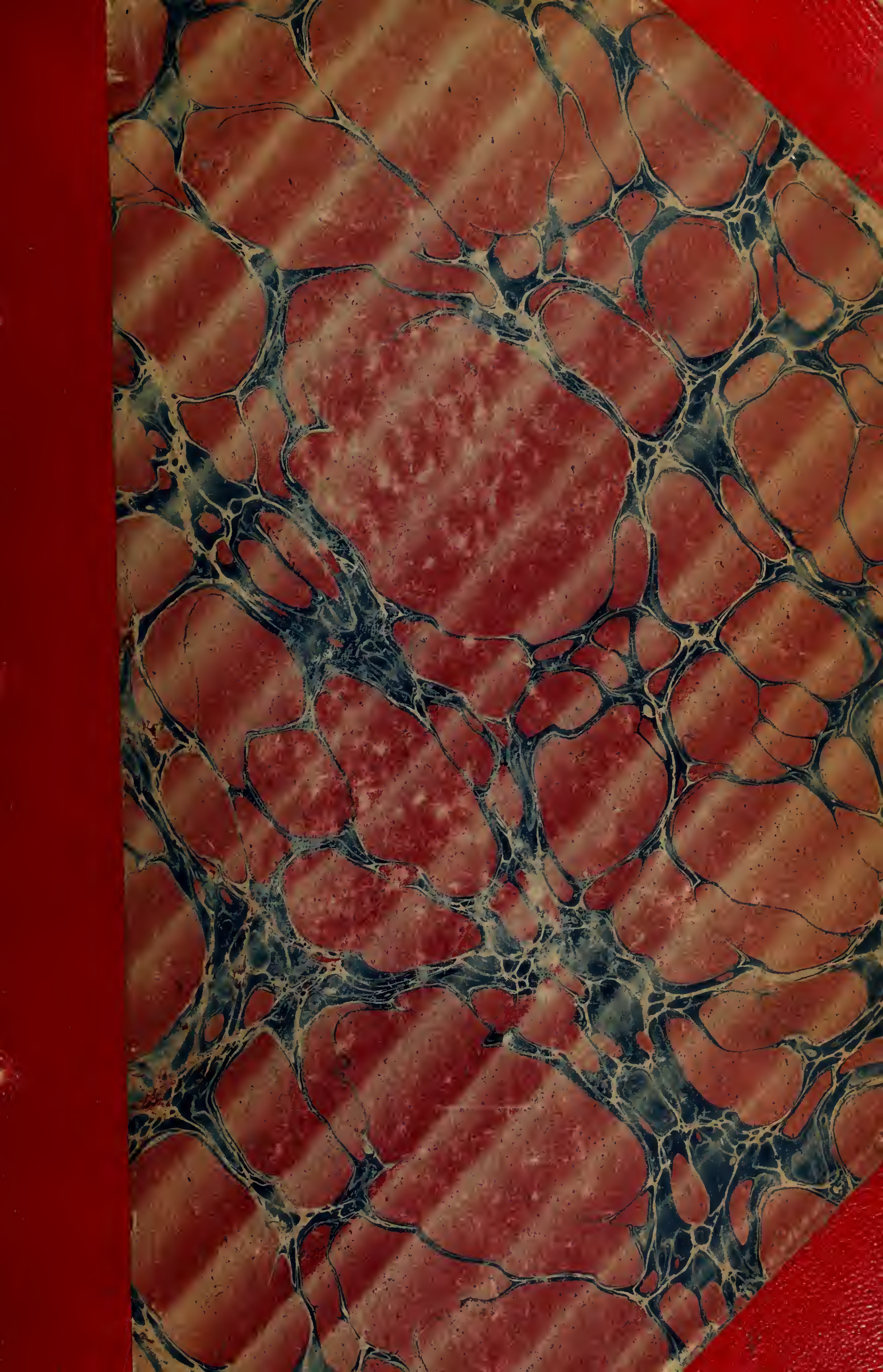

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THE HEALTH OF THE DENTIST.*

BY W. W. H. THACKSTON, M.D., D.D.S., FARMVILLE, VA.

Mr. President and Members of the Tennessee Dental Association: At the request of a loved and honored member of your State representative body, I feel pleasure in submitting a few reflections which I trust may be of some interest, and which may at least add a trifle to the value of your annual transactions and proceedings.

The general principles of hygiene and prophylaxis find happy and profitable illustrations in all the callings and pursuits of men; and as they are accepted and carried into faithful and systematic application, so will the approaches and inroads of disease be checked, health and strength conserved, life prolonged, and human existence shorn of many of its bitterest afflictions and saddest sorrows. The rules, habits, and observances that most conduce to the health, comfort, and happiness of all classes and conditions of our common humanity, in whatever business or profession they may engage, apply with equal force and effect to those who have chosen as a life calling any of the specialties or departments of the "healing art;" and of this class, dentists—especially dentists confined to an office and city practice—are not the least dependent upon or amenable to the great and general laws of health. Very largely the work of the dentist is executed and performed in a position of the body abnormal and constrained, bent and bowed, with the thoracic and abdominal viscera cramped and more or less compressed, the head hanging over the patient at an unnatural and most uncomfortable angle, the muscles of the limbs and body, the nerves of the sentient and motor systems, together with the circulation of the blood, all stretched to an unnatural tension, and exercised under conditions more or less antagonistic to the healthy and natural functions of the human organism. The dentist is also often exposed to an atmosphere tainted by the exhalations of diseased lungs, throats, and mouths; and has to inhale through his own nostrils and into his own lungs air charged with the germs and microbes of malignant disorders.

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* Read at the meeting of the Tennessee Dental Association.

In addition to the physical requirements of dental practice, the mental faculties are called into active play, and all the resources of intellectual culture and professional knowledge are severely taxed; for whatever may have once been the popular and accepted idea of dentistry, it is no longer a mere manipulative handicraft, worked in ruts and groves; but a *science*, demanding the exercise of scholarly abilities and accomplishments, as well as manual dexterity and skill.

It is thus seen that few of the professional pursuits of men are more likely to imperil health and shorten life than the unguarded, close, and unremitting practice of dentistry. And the great question how best to meet and discharge our obligations to society, and at the same time conserve our health, foster our strength, and prolong our years, is one that should claim our earnest thought and thorough investigation. In a general way it may be said that *temperance, cleanliness*, and *judicious rest and recreation* may be regarded as the most effective and available of all hygienic and prophylactic means and resources; but for the hard-worked practicing dentist there are important *special* considerations and requirements, not to be classed as general, and which cannot be ignored or disregarded with impunity.

I wish just here to remark that I do not employ the term "temperance" as expressive of abstinence from whisky and other intoxicating beverages. I use the word in its general and original sense: "Moderation in the indulgence of our natural appetites and passions"—temperance in *eating* as well as in drinking; temperance in *working*, in hours of labor and confinement in the office and over the chair, and especially temperance in all the forms of self-indulgence. Dentists, like other men, may be intemperate in many, *many* other ways than using intoxicating beverages, smoking or chewing tobacco, unchaste habits, consorting with "fallen women," etc. The orthodox and honored phrase "temperate in *all things*" covers the ground I would have you occupy, and expresses the sense in which I employ the term.

From a somewhat careful observation of the health and longevity of dentists as a class, I am constrained to say that a disregard of the limitations imposed by temperament, heredity, and individual idiosyncrasy, together with intemperate *eating*, intemperate devotion to *work*, often under the most unfavorable conditions, such as ill-lighted, badly ventilated, and improperly heated offices and laboratories, and lack of necessary relaxation and repose, have wrought greater injury and damage to the health of dentists than all other causes combined. Dentists, like other men, vary and differ physically as well as morally and mentally. What one dentist can accomplish with comparative ease, comfort, and safety to himself will tax beyond endurance the ability and strength of his professional brother, whom I have known to sacrifice health, and in a few instances life itself, in the effort to do as much and to do *that* much as well if not better than could his more fortunate and gifted fellow-craftsman.

I assume that all dentists, in this day of culture and enlightenment, accept the aphorism that "cleanliness is next to godliness" in its hygienic, prophylactic, and therapeutic, as well as in its moral and social sense and applications. I shall therefore not consume your time or insult your intelligence and self-respect by a discussion and exhortation under this head of my subject. I prefer to believe, as I sincerely do, that the dentists of the Tennessee State Association need no information or instruction as to the value and importance of the most absolute and perfect cleanliness in person, implements, and environments of every character and description. We all know the dangers of an impure and vitiated atmosphere; and we all recognize the peril of using foul and infected instruments and appliances.

The operating rooms and laboratories of the dentist should always be well lighted and ventilated, and should be kept at a temperature comfortable, and as nearly equable and uniform as practicable. In operations at the chair, where most of the dentist's work is done, and where the heaviest draughts are made upon his strength and vital forces, the use of a light and handy stool for the sitting posture, and when compelled to stand, the reflected light from a mouth mirror will enable him to work with the head and body erect, and largely relieve the tension and strain upon his muscles, nerves, and organs of vision, as well as protect him from many a tormenting head and back ache, and much of the general wear and waste of his physical powers.

In concluding this paper I cannot too strongly emphasize the absolute and imperative necessity for systematic relaxation from the exhaustive demands of an office practice, especially work at the chair. To conserve health and nurture strength, the dentist should so regulate his habits and professional engagements as to have hours for work, and regular periods for refreshment and rest. As nearly as possible his meals should be taken at regular periods, and from eight to ten hours out of each twenty-four should be devoted to sleep. In the long and heated days of summer, a short sleep or "nap" of ten or fifteen minutes after the midday meal will be found an aid to digestion, and a great refreshment and invigoration to both mind and body. The value and importance of *outdoor* exercise can hardly be overestimated by the dental practitioner. The nature and character of the exercise best suited and most effective and enjoyable must be determined by the preferences and peculiarities of the individual. Some prefer walking, others riding, either on horseback or on wheeled vehicles. Dentists, as I have said, vary and differ. What will refresh, please, and invigorate one will worry, fatigue, and disgust another. Some are benefited and greatly enjoy a turn at wood chopping or sawing in winter, and at hoeing and raking among the vegetables or flower beds in spring and summer; while others prefer athletic and field sports, and derive the largest measure of recuperation and enjoyment from rowing pleasure boats, pitching quoits, and swinging dumb-bells.

Among the inventions and evolutions of the present day and age the bicycle suggests one of the most satisfactory arrangements and combinations of which we have any knowledge, for utility as a means of quick and ready transit, and at the same time healthful outdoor exercise. The exhilarating effects and influences of rapid motion, spinning over the ground and through the open air, calling into play nearly all the muscles and stimulating almost every tissue and organ of the body, must, when not indulged in to excess and abuse, be one of the best restoratives to which a dentist, fagged and worn, can possibly resort.

It is said that one of the most distinguished and illustrious "fathers of medicine," after a life of observation and research, left as his last bequest to humanity a condensed embodiment of the laws of health in the following aphorism: "Keep the feet warm, the head cool, and the bowels open." In behalf of my fellow-craftsmen, I beg leave to supplement the quoted aphorism with temperance, cleanliness, and rest.

ORAL HYGIENE.*

BY D. R. STUBBLEFIELD, A.M., M.D., D.D.S., NASHVILLE, TENN.

In discussing this very interesting subject I shall only refer to decay of the teeth. That part of it is sufficient of itself to constitute a foundation for another paper longer than this ought to be or shall be. To us who spend our lives in doing all we can to combat caries of the teeth, the almost universal need for and the comparatively universal indifference to this need are subjects alike of surprise and disgust.

We devote so much time and effort preparing for our work, time in which the great value of human teeth is a constantly deepening conviction, and are so busily engaged day after day in honest efforts to redeem these structures from threatened ruin, that we are almost overwhelmed by the gross negligence of the people at large. The experience of the author of this paper is not unlike yours, in feeling quite often that the patient believes one, if not the most patent, factor in his admonitions is that he may get a fee for caring for the teeth that he declares are in danger. This not only humiliates, but insults the high-minded dentist engaged in conscientious daily work. True it is, and that is bad enough, that our prosperity depends upon the "misfortunes of our fellow-men," as some wiseacre has expressed it; but he forgot to look deep enough to see that all men occupy that same relation as much as we do. The physician waits upon the sick, not the well; the lawyer pleads for the cause that is in danger, not the one that is safe; the farmer expects his corn to feed those that hunger, not those that are never hungry. And so we can show to the last analysis that man does not live alone, but in vital nearness to his fellows and all creation besides. We are proud to occupy our relation as preservers of so important a part of the human organism as we can easily show the teeth to be. At the same time, it does look like the sensible people of the world might come to look on dentistry in the same light as other departments of human healing. Pursuing this strain would fill a volume, however, and we must dispense with it, not reflecting upon its importance, but rather reserving it for some future opportunity.

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* Read at the meeting of the Tennessee Dental Association.

Oral hygiene, stripped of some of its usual limitations, has still much important demand on us. Hygiene of any kind, health of any part, or of all parts, of the body must forever hold matter of living moment and substance of vital interest to us. The importance of the whole subject lends itself necessarily to any part. The working of the members of the body, as outlined so strongly yet so simply by that old philosopher, Æsop, years and years ago, in which he showed that no part could go on a *strike* without producing confusion and ruin to all, must forever remain true from our very nature.

This must not be taken, however, to indicate that no departure whatever from perfect condition and coöperation can occur without immediate disastrous results. On the contrary, many, and we might say almost constant, variations from absolutely perfect condition are found; and yet, such is the wonderful resisting and *reconstructing* power of nature that we survive. Indeed, health itself is oftener a successful fight against departures from perfect condition than it is anything of a perfect physical state. A man is not alone in this. That wonderful, inexplicable entity that we call life vitality—the vital spark—seems to impart to all organic nature that holds it this marvelous power of resisting, of growing again, of living when almost no part of it yet retains its perfect functional activity.

This exceedingly inviting field, however, must not be allowed to lure us from our subject. While health may reasonably be considered to consist of a combination of variations from absolute physical perfection, nevertheless we must bear in mind that the sum of these departures (mind this) *must ever be less than half*, so to speak, *of perfection.* Whenever these departures, taken with the physiological changes constantly going on in the body, aggregate more loss than the ability to repair can meet, a measure of death commences. Living is inherently, therefore, *molecular death*, controlled and limited by the medicating power of nature. This *medicatrix naturæ* is the sheet anchor of the doctor, without which every sick man would be as a bark caught on a lee shore driven steadily in upon a fatal reef. In such an hour death would exult like a demon in the wild shrieks of the gale, and the beat of the angry surf would be the clapping of his mighty hands. To live in such a sea, to expect to be safely washed through the whetted maw of that hungry reef, is not one whit less to be thought of than to recover from a disease unresisted by nature. But by the stronghold of this divine anchor to the windward, held by the cable of intelligent medication, we may all hope to ride safely in the very yawning jaws of the roaring breakers.

In the hygiene of the mouth, to which we must confine ourselves, we must expect to see departures from perfect parts and still find comparatively good health. In no part of the body—our stomachs excepted—do we find negligence and impositions more usual than here. Dentists know that it is the *rare* exception to find a mouth cared for with that scrupulous attention to detail that marks the care oftener of the body at large. We resent the idea sometimes that fundamentally we are akin to nature in the lower manifestations, but few of us differ much in our everyday inclinations. We may not now allow ourselves to explain this statement fully, but suffice to say that our creature comforts, as they are called, constitute the most inviting allurements to us all—are, in fact, our life's great aim. To eat, to sleep, and eat again: that is the round in the last analysis of our earthly existence. We sometimes astound our patrons by claiming that the teeth should be deprived of their food accumulations just as thoroughly as the knives and other implements of table use after meals—all meals. To be sure, in our favor, the natural processes of chewing and insalivation and swallowing tends to remove much of the food detritus, but no thanks to us—nor *from* us in a large majority of cases. Mr. President, one question. If you were to order the sergeant-at-arms to turn out every dentist in this assembly of progressive dentists whose teeth were not up to *his own standard of clean teeth*, how many do you think would remain in here? The good Book says: "By their fruits ye shall know them." We are very much like the preacher who told his flock, when they were prone to show him wherein his life did not evince his teachings: "Do as I *say*, not as I *do*." No, gentlemen, we may jest about it, but it is no subject for jesting. It is a reflection upon us if we claim to know better. A *doctor* means "a *teacher*," from the signification of the title, or "one taught," whichever you prefer, and we must occupy one or the other rôle. How can we as dentists assume to chide intelligent patients for neglected mouths when we are using mouths right then that might serve to illustrate our correct views? Who, in such a case, can assume to cast the first stone?

Again, if we are *not taught*, and may thereby go free, ought we to pose as *educated* dentists, abreast with progress? Everybody must admit that the teeth should be as clean as the hands, and clean hands within the limits of time and circumstance are necessary to gentility.

Time forbids that we dwell longer. Live and intelligent dentists know what ought to be, and this body knows. We would suggest several things.

First, that dentists themselves never wash their hands any better than their teeth. Keep both clean or quit practicing dentistry.

Secondly, that this Association appoint a committee competent to formulate simple, brief, sensible rules for prevention of the diseases of the mouth.

Thirdly, that when this has been thoroughly done and passed upon, it have such rules put in attractive form, and authorize members to circulate these little booklets among the guardians of the young.

Fourthly, that this Association put on foot plans and measures to attract municipal, not to say State general government, attention to the fact that the teeth of the children ought to be cared for along with the hands and face and hair and brains at the public schools. They demand cleanliness to that other extent, and we ought to put in a claim for our branch of human healing.

In conclusion, Mr. President and gentlemen, just a few words. This scheme, of course, would appear in the nature, somewhat, of a revolution, and revolutions do not always succeed, though they may be right. But rest assured that short of this high ground we may not rest conscience clear. The hour has arrived when hygiene, the *philosophy* of *prevention* in contradiction to resistance and *cure*, shall dominate all other methods resorted to in scientific warfare. The world has at last come to think that human life is worth as much attention in its preservation as human material possessions. Intelligent appreciation is rising. Some people already ask that they be saved from the effects of disease rather than risk recovery from its hold. All the various disease monsters that have in times past ravaged the world at will, glutting their ravening greed for human life almost without resistance, are met with steady pulse and equal heart beat to-day. Dentistry and dentists must rise to meet this measure in every particular, and through hygiene—intelligent hygiene—may we attain that end. The American destist leads the world, and that proud boast carries with it this professional *obligation.*

SAVING TEETH.*

BY B. D. BROBSON, D.D.S., KNOXVILLE, TENN.

THE origin of dentistry is not positively known, but remote ages record operations on the dental organs. Hippocrates mentions it in the fifth century B.C., and in the same century Horace speaks of the sorceresses Canidia and Sagona running through the city and losing, the one her false hair and the other her false teeth. Crude as were the first operations, beneficence has characterized the art from its earliest inception, as its function has been to restore pathological or accidental blemishes. Dentistry existed for centuries under the ban of ignorance, but gradually emerged from the manacles of obscurity, and stands to-day a well-developed art and science, taking honorable rank among the learned professions, and recognized as one of the greatest boons ever given to man. And indeed no profession has made more rapid strides, and no avocation is more worthy the admiration and esteem of the great masses of the people who have been the beneficiaries of this branch of the healing art. The ancients recognized the value and importance of the teeth. Moses legislated his famous law "a tooth for a tooth," and according to his law, if the master broke the tooth of his slave the latter was set at liberty. The Talmud says: "Gamaliel, Paul's teacher, had a slave whose freedom he very much desired, so he broke his tooth and celebrated his liberty with a banquet."

Digressing somewhat, I want to boast of the oft-told tale that most of the progress of modern dentistry is due to capable, energetic and thinking men of the United States. Here was the first college established for the further education of dentists; here was the first journal published for the interchange of ideas and experience; here was formed the first association for mutual assistance; and here in fact, as it has been said, "is the cradle of modern dentistry." However, we as Americans probably need the ministrations of dentistry more than any other country, as more inducements for dental deterioration exist among us. Our food is too varied; it is improperly prepared, and we are too busy to chew it sufficiently, thereby losing the exercise requisite for good, sound teeth. Presuming that every man in the practice of dentistry is alive to its interests, and anxious to overcome every obstacle for its ultimate climax, we may safely say there are more persons engaged in the *study* of this specialty of the healing art than in any other, and it has excited the almost idolatrous devotion of the thinking men of our profession, men who are studious and capable of wrestling with the most intricate subjects; men who are self-sacrificing and have been willing to endure the deprivation of pleasure, recreation, and a money remuneration for the improvement of a great science.

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* Read at the meeting of the Tennessee Dental Association.

The little things of this life compose the aggregate. Little drops of rain at Waterloo sent Napoleon an exile to St. Helena. A little bullet tearing through a flag has brought nations to war. The saving a tooth at first thought seems a little thing, but what a boon to humanity would be the discovery of a sure prevention of the loss of teeth! To what extremes has pain in a little tooth often led the poor victim! Let those speak who have been possessed by this evil spirit.

The theory and practice of dentistry is a beautiful study, and there is enough in it to occupy the time of any one man. But what will it profit a man if he gain the whole world of theory, and then is not capable of applying the principles in a successful, practical way? Many are the mistakes that are made in the treatment of diseased teeth, and many are the times when failures may be attributed to the lack of even a little skill, thereby immolating upon the altar of ignorance an organ that might otherwise become a useful member of the oral cavity, adding strength and beauty to the mouth. In the saving of teeth we may truthfully say that there are no ironclad rules governing the methods of treatment and filling. There are so many things to be considered that it is impossible to give any rule in the use of materials. Circumstances control indications. The use of any material is to be decided by the judgment of the operator, and in proportion as such judgment is good or bad is a patient served or abused. Let us consider the materials.

The virtue of an amalgam consists in its absence of change. None of the agents used in filling has excited so much discussion pro and con. No material is in more common use, and many cases are presented where such a filling seems the only one practicable. An amalgam that will retain its color and not shrink, properly manipulated, is second to no other material as a tooth preserver. I have seen fillings of this material that had been in constant use for twenty years, and apparently in as good condition as at first. Of course much depends on the way it is manipulated. Too much mercury is sure to destroy the setting properties, while too little favors the disintegration of the filling. Then there are the cements, phosphates, tin, gutta-percha, etc., and last, but not least, gold—all having their value in their places. I believe as a rule we find all materials discoloring under certain conditions.

"Gold, when not contraindicated, is the material we should always use in filling teeth," says a prominent authority. That is the dentistry of the past and present. I believe the dentistry of the future is a material that will be more in harmony with the color of the tooth, more quickly and more easily inserted, and with less annoyance to the patient. This is a progressive age. The inventions of man are more numerous and useful than ever before, and no less so in dentistry than in other avocations. We can't afford to lag behind in the bustling world of new discoveries and inventions. There is a law in physics which says that absolute contact between two bodies is impossible, but the material that approaches nearest perfect contact with the walls of a cavity is the material that will best arrest decay. A material that suits one may not suit another. One man gets such results from a certain kind of gold as to make him an ardent advocate of that particular gold, while in the hands of another it might be wholly inadequate and unsatisfactory. A few men manipulate noncohesive gold in a way that excites the admiration and almost envy of the rest. But of all agents used in the filling of teeth most practitioners, I believe, will admit that the ideal material has not yet appeared.

In the treatment of cavities reference must be had to their surroundings. The weaker the tooth the more careful should be the finish, which should always be as near perfect as possible. When the cavity is well prepared the battle is half won. It sometimes requires the greatest ingenuity of the operator to shape a cavity for the retention of the filling, and here again must we bring into requisition the necessary element to success in any vocation—good judgment. In badly decayed teeth my experience has been a layer of softened dentine over a nearly exposed pulp is the best capping, and after using a germicide, the cavity filled with phosphate, wait a few days before filling permanently. In treating dead teeth we are often confronted with difficulties, some of which can't be overcome; as, for instance, the complete removal of a nerve, and the thorough cleansing of the canal, all owing to the tortuous condition of the root. Who would have the courage to say he always cleanses and fills perfectly the buccal roots of upper or mesial roots of lower molars? I believe in the majority of cases these canals are imperfectly cleansed and filled, and in such cases, where small particles of decomposing nerve tissue remain, we can only impregnate with a suitable antiseptic and reduce to a minimum the possibilities of any future annoyance. As to the proper antiseptic we find the opinions of the profession in a state of chaos. Among some of the best might be mentioned carbolic acid, bichloride of mercury, peroxide of hydrogen, and the essential oils, all being useful and effective. The world of experiment semioccasionally gives birth to an antiseptic that promises to revolutionize the treatment of diseased teeth, but a few months suffice to show that many of them are not only useless, but detrimental. A careful diagnosis is prolific of more beneficial results than any part of the operation, and a lack of that ability contributes more to miserable failure than any other one cause. In all work with our patients we must do the best thing in our power, and be sure that their interests have been the first consideration.

TREATMENT AND FILLING OF DEAD TEETH.[*]

BY R. D. CRUTCHER, D.D.S., NASHVILLE, TENN.

THE subject that I am to present to you is one of vast importance, which has been before every Dental Association of note that has ever blessed the world by its labors. It has been presented, and very ably discussed by some of the most scholarly men, but still I propose to bring it before this association that our senior members and brethren may give to us younger men more light than we are likely to have so early in our professional life.

There are various modes of filling dead teeth, in some of which we all meet with failures, though with some the per cent. is very small, and others rather large. There are five classes of dead teeth which present themselves in everyday practice—viz.: 1. Abscess with fistulous opening. 2. Blind abscess. 3. Those without either fistulous opening or blind abscess; but presenting a dry, chalky, or mummified appearance of the pulp and surrounding dentine. 4. Those with more than one fang, where the pulp is in dying condition, and the patient is of very high nervous temperament and will not submit to immediate removal of pulp. 5. Single-rooted teeth with exposed pulps in dying condition, of which the patient will submit to immediate removal.

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[*] Read at the meeting of the Tennessee Dental Association.

The abscess with fistulous openings presents itself as often if not more frequently than any other class of dead teeth in everyday practice, and sometimes we meet with cases which prove very hard to control, especially if there is much necrosed bone in connection. However, the dentist must exercise his best judgment; and should he see proper to remove the tooth for the salvation of others, he had better sacrifice it at once, though the majority of cases may be saved by the proper use of burs and scrapers, removing all necrosed bone, after which syringe out the cavity thoroughly with tepid water, repeating the operation with a fifty per cent. solution of sulphuric acid, being careful not to let the acid run into the mouth. Arm your engine with Gates's Glidden drill, and thoroughly open up the pulp canal, approximating the apical foramen, removing all decayed matter from the roots, and finish by the opening up of the crown cavity as if you were expecting to fill immediately. On finishing this work, with Dunn's syringe wash out the cavity with peroxide of hydrogen, pumping it in and out several times, wipe cavity with bibulous paper and dry with hot air syringe, repeat with ninety-five per cent. alcohol, wipe and dry as before, completing the operation at present by the temporary stopping of the canal with floss silk saturated with carbolic acid dipped in aristol, and placing a cement filling over the top to keep it dry. Now discharge your patient with instructions to call again in two or three days. On return, if you find considerable swelling with pus oozing from the parts, there still remains to be removed more necrosed bone. With small chisels, burs, and scrapers proceed at once, making sure of the removal of every particle of diseased bone, wash out with peroxide of hydrogen, and complete with a fifty per cent. solution of sulphuric acid, charging the patient to use as a mouth wash pure listerine. If too strong, dilute with water, with directions to return each day thereafter, washing the parts with peroxide of hydrogen until cured up. Sometimes it becomes necessary to amputate the end of the root on account of its diseased condition. Where the peridental membrane has been destroyed by surrounding disturbances possibly from long standing, the end of the root may show a roughness caused by the absorption of the pericementum, rendering it an almost impossibility for the soft tissues to heal and conform to each other. Before the amputation it will be necessary to fill the root so as to avoid the appearance of materials through the root which will act as an irritant so long as the tooth remains, resulting in its loss prematurely. To amputate this member, arm your engines with a fissure drill, take a small bistoury and dissect back the gum, remove the fragments of overhanging bone, and you are now ready to proceed with the operation of cutting it off. Remove the amputated member from the socket and polish as smooth as possible the remaining end, wash out cavity thoroughly with tepid water, followed by peroxide of hydrogen, finishing the operation by placing in the cavity a piece of sponge which has been standing in a 1 to 500 solution of bichloride of mercury for twelve hours, closing the flaps of gum as near together as possible, which will in all probability close very nicely by healing in ten days if you have kept everything properly sterilized throughout the operation.

Remember that teeth with roots to be amputated must be filled first—*i. e.*, the root—as above stated, and in other operations it may require immediate root filling, or it may be better to give time for healing in that of others.

I will now describe my mode of filling this class of dead teeth. My patient returns about ten days from time I discharge her from chair, with the gum healing very nicely, the soreness around tooth gone. It is now ready for investigation in the pulp chamber. On removing the temporary filling and the floss silk, I find no disagreeable odor that is characteristic of such teeth. I now wash the cavity with a fifty per cent. solution of carbolic acid and fill with lead points, driving them well home and hermetically sealing the apical foramen, unless I find a very flat and broad canal. This character of tooth I fill with chloropercha or oxyphosphate of zinc, working it well home and filling every available space. The lead points, which I most usually adopt, are prepared by myself, though they can be procured from any of the depots. I do this because I can come nearer producing in each case exactly what I want in a very few seconds at a very small expense making them from bar lead. If after finishing the root filling there is no perceptible soreness, you may at once finish the crown filling at the same sitting; but if there is soreness, it would be better to defer the crown filling for a few days. If the walls of the cavity are sufficient to admit of being filled with gold, it would be better to use it in preference to any other material; but if they are too frail, fill the cavity with oxyphosphate of zinc two-thirds full, and finish with amalgam. In this way you make a very strong tooth. However, I am about to overlook a very important fact in this last filling, and that is, where the walls are frail and would be likely to break at any time, always flare the edges of the walls outward and do not leave them perpendicular. If you do, it will be only a question of time when the patient will return with his filling gone, and the whole side of the tooth broken off near the gum; but with the flaring of the walls you overcome this difficulty by extending your filling over the edges, protecting the walls from undue pressure, and saving a great deal of annoyance to both patient and dentist.

The blind abscess which often frequents the dentist's office is a thing not to be appreciated by either patient or dentist, in any one of the three stages of which it is subject to appear. The first stage presents itself in the form of a sack or cyst caused from pent-up gases in the pulp canal, which may be relieved by giving drainage through the pulp chamber; and again it may be caused by the appearance of any foreign substance protruding through the apical foramen, due to the fact that the pulp chamber is wide open, and at each meal food may be crammed in as though it were a compress, which can be relieved by its removal from the pulp cavity. The second stage is the one to be most dreaded, in which pus has formed, and has begun its work of burrowing. In this character of abscess it is very trying on both patient and dentist, there being so much soreness and swelling, though it may be relieved in thirty minutes if you can give it proper drainage. However, it is not a good plan to open up the foramen if you can avoid it, as you will find it quite difficult to fill without carrying some of your material through the root, which will give rise to after trouble. Sometimes this can be overcome by the use of a jeweler's broach, passing it through the apical foramen, and giving it a few turns. But before you do so you had better pass it through a spirit lamp flame to remove some of the temper to prevent breaking, and should you break one it will be a very hard matter for you to ever remove it from the canal. If you can effect an opening in this way, it will make the operation more simple, as the pus will flow at once into the canal, and by the use of Dunn's syringe it can be taken out entirely by pumping in a small amount of tepid water, and when you find there is no more pus in the cavity pump in peroxide of hydrogen, and pump out a few times to make sure there is no pus left in the cavity. Now dry out the canal with a hot air syringe, and fill with carbolic acid and aristol made into a paste, and placed on floss silk, leaving one end of the silk protruding from the cavity, and finish filling the grinding surface with bee's wax, with instructions to remove it if it becomes painful. In from five to eight days it may be filled without further trouble. The treatment in the first stage is similar to that described in the second. In the third stage I would treat similar to fistular openings. I would turn back the lip, with my engine armed with a drill three-sixteenths of an inch in diameter, and after making an incision open into the end of the root, giving thorough drainage with the drill, though it is not necessary often to use the drill in the third stage). The only thing I use it for is to give thorough drainage. I failed to state that I would perform this operation in the second stage as a last resort, rather than open up the apical foramen with a drill. After I have made this a fistulous opening I would treat and fill as any other fistulous opening.

The class of dead teeth which present themselves for treatment without fistulous opening or blind abscess, but have a dry, chalky appearance in the pulp canal, or might be classed as the mummified pulp. This class we rarely find, though it would be far better could we have none other to deal with, as it is a very easy matter to treat such teeth, with sufficient care and delicateness as to not penetrate the apical foramen, as that brings about inflammation, and possibly gives rise to serious trouble, which can easily be avoided. They should be reamed out until solid dentine is reached, and with a fifty degree solution of carbolic acid wash thoroughly. Then dry and fill immediately. The roots should be filled with lead, chloropercha, or oxyphosphate of zinc.

Those teeth presenting themselves with exposed pulps having more than one fang, the patient of a very high nervous temperament, and will not submit to any treatment save the application of arsenic in some one of its many compounds. The one of which I use more than any other is a compound of my own, which is cocaine crystals and arsenic, equal parts made into a paste with wood creosote. applied to the exposed pulp and covered with oxyphosphate of zinc, and let this remain for three or four days. By so doing you rarely ever meet with any pain on removal of pulp. Should there be a high sensitiveness of the dentine, rendering it unbearable for the patient, stop up the cavity and let it remain so for a couple of weeks, and you will find on return the sensitiveness entirely gone, enabling you to proceed with your work of opening up the canals, and filling as before described. The beauty of using cocaine with arsenic is that you will not have that pain for from two to six hours due to the appearance of arsenic of which we all have had more or less experience, especially where the pulp is considerably congested. On account of such very slow absorption, the cocaine, acting as a local anæsthetic, renders it painless. I find that there are very few people who have had the trial of arsenic that like to have it repeated, and sometimes they claim it preferable to lose the organ rather than submit to its use.

Lastly, the single-rooted teeth with exposed pulps in dying condition is a thing quite easily managed, for we can usually open up the tooth so there is a very little trouble in getting at the pulp, and there being only one canal it may be removed almost *instanter* by the use of a small piece of orange wood trimmed to approximate the size of the canal, dipped in carbolic acid. Wipe the surplus off, place directly over the pulp chamber, and with one stroke of the mallet the work is done. Let it stand about ten or fifteen seconds and remove. Upon the removal of the wood there will be a slight hemorrhage following, which may be arrested by the copious use of warm water. When the hemorrhage ceases dry out the cavity and saturate thoroughly with pure wood creosote, then dry out with paper and finish by drying with hot air, and proceed to fill at once as above described. I have a record of twenty-three single-rooted teeth which I have treated and filled in this manner in the last eighteen months, of which not one has yet given rise to any trouble.

THE ANGLE SYSTEM OF REGULATION AND RETENTION.*

BY HENRY W. MORGAN, M.D., D.D.S., NASHVILLE, TENN.

After some years of experience with and observation of the work of others with the various methods and modes for the correction of irregularities and a careful comparison of results, time consumed, pain inflicted, cleanliness, and effectiveness, I have been recently led to make some experiments with what is known as the "Angle System of Regulation and Retention," and with such gratifying success, so far, that I am encouraged to call your attention to it.

I shall not attempt to defend the originality of the system or his right to give it his name; nor shall I presume on your time by a description or an elaborate detail of his method and appliances, for I take it for granted you are all in possession of the little work published by the Wilmington Dental Manufacturing Company (cost seventy-five cents paper cover); also that you are familar with the appearances of his fixtures as parts, as they are on sale at every dental depot, thus enabling any one with but little skill and in a very short time to construct almost any device desired. To the busy dentist this is a great labor and time saving factor in the production of a regulating appliance.

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* Read at the meeting of the Tennessee Dental Association.

Bands, levers, push and pull screws, rotating levers, etc.. are easily soldered together, and with cement to firmly fix them in place, teeth are easily and quickly pushed, pulled, rotated, or held in place.

This variety of an appliance is greatly to be preferred from a hygienic standpoint to those made of vulcanized rubber, covering, as they often do, two-thirds of the teeth in the mouth, which are kept constantly bathed in a vitiated saliva, and covered with a mass of decomposed mucous epithelium and food; as sometimes adjusted to be removed once or twice a week or less often by the dentist. Whenever an appliance of this variety is used it should be so constructed that the patient could remove it after each meal; that not only the appliance can be properly cleansed, but the mouth and teeth also.

To be able to properly cleanse the mouth, teeth, and fixture, without disturbing and without its removal is a great gain, and relieves the patient of numerous visits and saves the dentist much time, while with an intelligent patient where the screw is used steady and gentle pressure is kept up by supplying the patient with a wrench; and twice a week is as often as it is necessary for the patient to be seen for comparing the mouth with the casts made before beginning.

The band material is but .004 of an inch thick, and therefore, no injury to the teeth is necessary or marring their appearance in adjusting the fixture.

Firmly cemented bands at both ends give a positive pressure at the point where it is desired and a positive resistance at the opposite end of attachment, two elements of great value, the last of which is almost entirely wanting in regulating appliances of the old style.

It is not our intention to deny that these have done much good and have proved efficient in our hands and those of many others, some of whom have become quite expert in their use—but all of us have met with an occasional disastrous failure owing to the inability to control the patient and keep the fixture in place. When cemented in, these Angle fixtures are the least objectionable to patient of any we have used. They are easily kept clean, not bad in appearance, and are there to stay. The pressure should be gentle, gradual, and constant, but never severe.

Of two cases recently in our hands, one, a superior lateral closing inside the inferior teeth, was forced to its natural position in four days. The second case required the expansion of the superior first molars to force them to close over the inferior molars. Bands were cemented on and in two weeks they were where it was desired.

We commend the system and appliance as the simplest, easiest constructed, most cleanly, least painful, and altogether satisfactory we have ever used. We do not claim that it is the best suited to all cases, but believe there are few in which it will prove unsuccessful.

THE MARVELOUS BACTERIA.

THE reproductive power of many species of bacteria is so marvelous as to be entirely beyond belief. Prof. Lau says that he has experimented with several different forms of these minute organisms that were capable of doubling their number every hour.

When in good condition an average specimen of bacterium will produce 16,777,200 individuals of his kind in the short space of twenty-four hours. In forty-eight hours the offspring from a "germ" measuring not more than one-fifteen-thousandth of an inch will have increased until the bulk cannot be put into a half-pint measure, the total number of individuals then exceeding 281,500,000,000. If these deductions are correct (and scientists of ability have proved that they are as near as such figures can possibly be approximated from the very nature of the experiment), is it any wonder that "germ" or bacterial diseases are so hard to control?

Dr. Adametz, the Swiss savant, says that there may be more living, breathing creatures in a pound of cheese than there are inhabitants on the globe.

Selections. . . . .

DEGENERATION OF HUMAN TEETH: ITS CAUSE AND ITS CURE.

BY JAMES LEON WILLIAMS.

To insist rigidly upon certain kinds of food, either for children or adults, is one of the errors growing out of a partial view of the facts bearing upon the subject. The craze for the use of phosphatic foods has run a very vigorous course in America during the past twenty years, and all the while the quality of the teeth has steadily deteriorated. The truth is that the nutritive quality of food consumed in England and America is to-day, on the whole, far in advance of what it was fifty years ago. I am prepared to join hands with any one in the condemnation of the use of any considerable proportion of soft and pulpy foods, but the facts will not warrant the statement frequently made that modern food does not contain all the nutritive elements necessary for maintaining any part of the body in a state of health. Flour made from whole wheat may often prove a valuable food material, not because it is markedly richer in nutritive substances, but because it happens to better suit the assimilative powers of the individual. It is the difference in this assimilative power which makes "one man's meat another man's poison." The vegetarians insist that animal food is conducive to degeneration of the teeth, but the facts are against them. The inhabitants of Greenland and Labrador, living almost exclusively upon animal food, preferably that which is fat, have very fine teeth, almost entirely free from decay. The same is true of the Gauchos, a tribe of cattle-breeding people inhabiting the great upland plains of South America, and subsisting entirely upon a meat diet. This same people, living in another part of the country, in towns, and consuming a mixed diet, suffer considerably from decay of the teeth. The Scotch people, who eat large quantities of oatmeal, and the Chinese, who live almost exclusively upon a vegetable diet, have, as already mentioned, very poor teeth. The only conclusion which can be drawn from a careful examination of the foods of all nations is that vigorous people may be perfectly nourished on a great variety of food materials, while the most carefully selected diet will not maintain a high standard of vitality among a people where there is prodigal waste of nervous energy.

But entirely aside from any benefits to be obtained from changes in food habits, it is possible by personal care to prevent to a very great extent the rapid decay of the teeth which we everywhere see going on. This care must, however, be intelligently directed, and it must also be fortified and aided at the right time by such professional assistance as may be necessary. Most people whose teeth decay rapidly made the fatal mistake of delaying their application for professional aid, until the period of actual suffering arrives. It is then often too late to remedy completely the difficulty, and such benefits as may be conferred necessitate the expenditure of far more time and entail more suffering than if the trouble had been taken earlier. Much greater benefits may often be obtained by spending one hour with your dentist in January than you will be able to secure by sitting under his hands for three hours if you delay your visit until the following December. It is true the more skillful dentists of the present day have done much to eliminate the element of pain from their operations, but I imagine that no amount of tact or inventive skill will ever convert dentistry into such a luxury that people will prefer to spend three hours rather than one in a dental chair.

I may be permitted a slight digression at this point to emphasize the necessity of careful handling of children during their first experiences with the dentist. Once their confidence is completely secured, as it nearly always may be by the exercise of tact and gentleness, they make the best of patients. But any attempt to force them to submit to long and painful operations is certain to create a prejudice that the knowledge of maturer years can hardly efface.

The golden truth with reference to personal care of the teeth is this: A perfectly clean tooth will never decay. Now perfect cleanliness of the mouth largely means that it must be kept free from those destructive, acid-forming bacteria which are the immediate cause of decay of the teeth. But can this be accomplished? I believe that something closely approximating this very desirable state may be reached. If the first object of dentistry be to save the teeth by preventing decay, then it is a source of no little surprise that conscientious dentists have not made greater efforts in this direction. Few people know how to brush their teeth properly, and still fewer possess brushes with which this important feature of the daily toilet can be thoroughly performed. The head of the brush and the face of the bristles should be carved so as to conform in a general way with the arch of the teeth. Each tuft of bristles should be pointed so as to obtain the utmost penetration into the deep sulci or grooves in the masticating surfaces of the molars and bicuspids, as well as into the interstices between the teeth, for it is here where the bacteria can usually obtain undisturbed lodgment, that the process of decay most frequently begins. The teeth should be brushed in the direction in which they grow—that is to say, the *upper* teeth should be brushed *downward* and the *lower* teeth *upward*. This enables the pointed tufts of the bristles to penetrate the interstices between the teeth to a much greater extent than if they are brushed directly across their faces as in the usual manner. But brushing alone is not sufficient to keep the teeth entirely clean. Of nearly as much importance as the brush is the use of that form of untwisted silk thread known as silk floss, which can be obtained from any good dentist, or from the dental supply stores. This should be drawn between the teeth and moved back and forth freely for the purpose of thoroughly removing any decomposing particles of food which may have become wedged between the teeth.

The preparation which is used in cleansing the teeth is also a matter of much importance. The various carbolic powders, camphorated chalk, and boric acid pastes, which are so extensively advertised and sold, are better than nothing when they do not contain injurious substances, as is sometimes the case. But, so far as I am aware—and I have given much attention to the matter—none of the preparations to be found in the market contain any antiseptic or, more properly speaking, any germicide capable of destroying the bacteria which proliferate in the mouth. Dr. Miller says that he found a very weak solution of corrosive sublimate the most efficacious germicide for this purpose. But this mercurial salt is a virulent poison, and is unsafe in the hands of a nonprofessional, even in the form of a weak solution.

There has recently been added to our resources in this direction a drug which seems to meet all requirements. It is one of the many wonderful products of coal tar, and is known as hydronaphthol. It ranks very near corrosive sublimate as a germicide, and is quite free from the toxic properties of that drug. It is a brownish powder, possessing a slightly spicy odor and taste, and is therefore in convenient and agreeable form for use. Special conditions of the mouth often call for a special form of toilet preparation, but for general use I recommend a paste made by grinding the various necessary powders in pure glycerine, and adding, in addition to the blending of essential oils for flavoring, five or six grains of hydronapthol, previously dissolving in a few drops of spirits of wine, to every ounce of tooth paste. Such a preparation, thoroughly applied to the teeth morning and evening with the brush and silk floss, will, if the practice be commenced with the eruption of the permanent teeth, enable most people to reach the meridian of life with an unbroken set of teeth, and with far less aid from the dentist than is usually required. And, finally, perfect cleanliness of the mouth means more than the preservation of the teeth and the avoidance of such diseases as spring from imperfect mastification of food. Recent investigations make it almost certain that the bacteria of several infectious diseases pass their period of incubation in the mouth. I believe that one of the best safegards that can be adopted against attacks of diseases of this character will be found in a thorough cleansing of the mouth twice or three times a day with a preparation containing the germicide above mentioned. I have strong personal reasons for believing that this antiseptic treatment of the mouth is a most effective prophylactic measure against that dreaded scourge, influenza, which has made such sad havoc in London during the past two years.—*The New Review.*

ETHICS.*

BY W. A. KNOWLES, M.D., D.D.S., SAN FRANCISCO.

Mr. President and Gentleman: During the years past the subject of ethics has attracted considerable attention from the dental profession, and it still remains in a very unsettled condition.

The idea of having a code of ethics seems to be mainly for the purpose of maintaining a high standard, enabling dentistry to retain the respect of the people, which, as a learned profession, would seem to be its due. The seeking of notoriety and the desire for money are principally what cause professional men to violate their code of ethics, written or unwritten.

There can be no question but that the code has done much good, but that it may sometimes be made to be harmful in its operation is still open to discussion. In effort to deter some from acting in an unprofessional manner injustice may be done to others.

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*Read before the California State Dental Association.

It is well, of course, to prevent the paid-for advertising that is frequently seen in the daily papers in the form of an enterview or "write-up," and all kindred matter; but to go so far as to suggest censure of a professional man for having a sign upon his building, upon each of the two sides, when he occupies a corner suite, would seem to be farcical. To refuse to allow a practitioner to insert a card in a paper, giving his name and address, or a notice of removal of office, for more than three months, would seem to be very unjust. When such small matters as these are considered violations of the code of ethics, and other and much more glaring violations occur and no prosecution follows, there would seem to be something wrong.

It is true that there are always to be found in any profession members who would prostitute such profession to the basest uses from personal motives. It is true that stringent measures may be necessary to hold such persons to the semblance of respectability, but it would not appear that the trivial and trifling matters above mentioned, and other kindred rules, would accomplish any great result.

I once heard a practitioner of dentistry remark that certain strict rules might be good enough for a family of three, but they would not apply to a family of nine. It would seem that there is a great deal more truth than poetry in this statement.

There are many deserving men in our profession who ought to legitimately make themselves known, and who yet may be in constant fear of violating some of the provisions of the code. There should be some legitimate way of advertising.

It goes without saying, that anything which would be approved as legitimate would soon be imitated and made the excuse for gross violations of the code on the part of some; but the fact still remains that, to protect the many, a few may suffer.

A man in business expects to compete, to advertise, and to make himself known in every possible manner. Competition is so carried on that it does not develop the most desirable traits of the human character, and, in professions, experience has taught that competition based upon fees has invariably brought discredit to the profession. The fact is, that a man who simply wants to make money should not enter the humanitarian profession of medicine or dentistry. The love of lucre does not usually agree with the love of profession or the most worthy feeling toward humanity.

The most humane practitioner is he who makes the fee a secondary consideration. Such a man has no need of a code of ethics. He is not of the class which has been attracted to the profession by the prospective fees. "He who performs his good works for the gain of gratitude will enjoy but a small salary." Such a one may not be as rich or notorious as others, but he certainly has what nothing can purchase, and that is an easy conscience. If the love of humanity *alone* would govern the professions, they could be elevated.

There are many noble, earnest workers in both professions, and to their unselfish devotion is due the excellent condition of the professions.

Those against whom it has been necessary to enforce the codes of ethics have been the ones who are continually endeavoring to drag the professions down to their own levels, largely from the greed of money getting.

Competition in regard to excellence of work or pain saving would benefit mankind and elevate the professions; but, when money alone is the incentive, the quality of the service rapidly deteriorates.

Some of our dental colleges are very queer in their efforts and methods to obtain students. How can a college expect to turn out a good class of practitioners when it makes use of questionable methods of advertising itself? "Example is worth a thousand precepts."—*Pacific Coast Dentist.*

PYORRHOEA ALVEOLARIS.

At the regular meeting of the New York Odontological Society, held November 21, 1893, Prof. C. N. Peirce, of Philadelphia, read a paper on the "Etiology of Pyorrhœa Alveolaris," in which he stated that, in the effort to reduce this disease to its simplest factors and determine the primary origin of each, he should coin two terms which he thought would be more expressive as to the true nature of the disease. He believed that in one form of calcic pericementitis the origin of the salt was the saliva; and in the other form, the blood. The former he therefore designated as ptyalogenic calcic pericementitis, expressing the idea that in its origin it is local, peripheral, and salivary; the latter he designated as hæmato-genic calcic pericementitis, expressive of the idea that in its origin it is constitutional, central, and associated with some modification of the normal composite of the blood-plasma. This latter he believed was the condition in true pyorrhœa. In this he suggested that possibly some chemical agent derived from the blood, the product of some morbid constitutional state, might be the exciting cause. With the view of testing the plausibility of this assumption, he had the deposit removed from the apical extremities of teeth which had been sacrificed by this so-called pyorrhœa, and subjected to chemical analysis. In every instance the chemical methods employed revealed the fact that the deposit was a combination of calcic urate, sodic urate, with some calcic phosphate and carbonate. *The existence of the urates, in which the uric acid is the predominating element, shows that this deposit is a precipitate from the blood exudation and the irritation of constitutional origin*, the disease, if these analyses are confirmed by subsequent experiments, being but another phase of the uric acid or gouty diathesis. These deposits were examined by Prof. Ernest Congdon, of the Drexel Institute, whose experimental skill is a sufficient guarantee for the accuracy of the results obtained, and subsequently repeated by Prof. A. P. Brubaker with the same results.—*International Dental Journal.*

PORCELAIN INLAY.

Dr. Russel, of Keener, N. H., gave a very interesting clinic on porcelain inlay. He had a labial cavity in the right superior incisor. The cavity was prepared as nearly cylindrical as possible, then one of Russel's porcelain cylinders was chosen of the proper shade and slightly larger than the cavity. It was then cut off at a handy length for a mandrel, and ground to almost the size of the cavity by having the mandrel revolving in the engine, at the same time being ground on the lathe, rendering the inlay perfectly round. It was then placed to the cavity and revolved at a speed in the engine, grinding itself perfectly into the cavity. It was then cut off slightly flush, set in the cavity with cement, allowed to harden thoroughly and then polished down even with the tooth. The result was a beautiful inlay scarcely perceptible.

This operation was of special interest to me as a porcelain worker. I could not recommend any system more accurate, but it is so very limited in its uses, as few labial cavities conform in the cylindrical shape, or could be made to without sacrificing a large amount of solid tooth structure, as nine-tenths of the labial cavities are of a kidney shape at the junction of the cementum and enamel, and mostly of receded gums, in which case the "Land" system of burnishing platinum foil into the cavity (no matter what shape) and baking porcelain (not glass) into it is better, and has a result just as good as Dr. Russel obtained.

While speaking of porcelain inlays, I will give an example of a case that came into my hands, sent by a dentist from a neighboring city, a few weeks ago.

The case of a lady, aged twenty-six, with excellent teeth, with exception of two large mesial cavities in both centrals, running to the cutting edge. The edge was shortened by abrason until the dentine was disclosed. She had them contoured with gold on four different occasions, and each time breaking away. Of course the gold should have showed the biting surface, which would have stopped the trouble. Being a lady of refined nature, she did not want the conspicuous gold, and asked if something to imitate the tooth could possibly be used. I resolved to try a combination of gold and porcelain. The cavities had decided undercuts at the gingival margin, and after preparing the cutting edge for gold, beveling it back so as not to show gold, I took an impression of the cavity with platinum foil, burnishing it well into the undercut before mentioned. I then drew out a piece of platinum wire very fine, and made a loop to lay in the bottom of the cavity on cutting edge, the free ends of the wire extending through the impression. I then removed the impression and wire together, and backed my contour, cemented it into position, and built gold over the loop of platinum wire in the cutting edge with the electric mallet, finishing with iridio-platinum and gold No. 60, having as a result an almost invisible operation which was gratifying to both.—*Fred J. Capon, D.D.S., in Toronto Dominion Dental Journal.*

[We witnessed Dr. Russel's clinic, and it far surpassed any work of the kind that ever came under our notice—was, in fact, the only decent inlay we have ever seen.—Ed.]

Extracts. . . . .

TREATMENT OF NEURALGIA OF THE TRIGEMINAL NERVE.

It is not necessary to define neuralgia, but a trigeminal neuralgia has certain peculiarities. The anatomy of the Gasserian ganglion and its three branches is known to all, but the difficulty of getting at them in the living person is little appreciated except by those who have tried. This neuralgia differs from ordinary neuralgia in being paroxysmal and is probably the most painful that one has to do with. There are periods of absolute quiet between the paroxysms. The changes seen in the parts supplied by this nerve and its branches are very slight in proportion to the pain the patient feels. There is generally no change at all or at times a slight glazed appearance of the skin, and very rarely there has been atrophy of the muscles supplied by this nerve.

The age at which this form of neuralgia occurs is a most important etiological factor. It generally occurs in persons over forty, but one case in a woman of twenty-seven has been reported. Another etiological factor is, that there are certain points of pain where the nerve makes its exit through the bone. When the surgeon has been called in the treatment by drugs has been exhausted. Quinine and arsenic are drugs that do the most good, and for this reason it was formerly supposed that these neuralgias were malarial, but the more recent discovery of the plasmodium malariæ has shown that this is not always so. The next best drug is aconitia pushed to its full physiological effect; also antipyrine and antifebrin have been used with good effect. The surgical methods are section of the nerve, stretching, and excision more or less far back. These are the three surgical methods used at the present day. Excision of the nerve was first done by Carnochan in 1858, and his operation was classical. The patient on whom he operated was a physician of the state of Maryland, in Caroline County. His operation was successful. Obalinski operated on a case several times, but relief was not permanent. There are numerous ways of getting at the nerve. We may take it from in front or from behind. Rose and Anderson, of Chicago, were the first to take it from behind. Horsley has also done it in this way.

Tiffany has operated twice in the head for intractable neuralgia. Both cases had been operated on before and one several times. In one case excision of the upper jaw nerve had been done. In his first case, which was a woman, he went through the side of the head, exposed the side of the brain, raised up the dura mater until he arrived at the middle division of the fifth, put a string around it so as not to lose it, then scraped back the dura with a dental instrument which he had slightly dulled, and brought the ganglion into sight. It was a novel sight to him to see the Gasserian ganglion exposed to view in a living person. The lower division of the fifth nerve sends a motor branch to the muscles of mastication, and in operating it is very hard to leave this motor branch untouched. When the head is first opened the brain swells up and fills the entire space, and it seems almost impossible to get at the nerve; but when the shock came on in this case the brain shrunk and got smaller and made operating possible. He did not pour cerebro-spinal fluid or blood into the head as had been recommended, and he did not suture the bone but the fascia. He wounded the dura, but no harm came of it. The patient got well, with no temperature. There was at first entire anæsthesia of the parts supplied by the middle and upper branches of the nerve; but there was no paralysis at all, and pain ceased from the time she went under the anæsthetic and she had no suffering at all. For two days the dressings were soaked with cerebro-spinal fluid from the wound, but he took off the dressings and took out the wire on the third day and every thing was healed. The patient was kept under observation for some time after the operation, and she had no relapses.—*American Medical Association Journal.*

SET-TO WITH A TARTAR.

Charles H. Yeager, M.D., is one of the ablest and most popular physicians of the staff of the Columbian Medical Bureau. Sari is an Amazon quartered in the Dahomey village on Midway Plaisance. For a week or more the bloodthirsty wench had been suffering from a raging toothache. Unable to sleep because of the pain, she had keep most of the villagers awake by her moans and cries. The sufferer was advised through an interpreter to call Dr. Yeager and have the offending member "attended to." Now Dr. Yeager is looking for that counselor with a gun, and the woman threatens to make it lively for the doctor if he ever appears in the village again.

It was late at night when Dr. Yeager's residence bell was rung. The visitor was a messenger from Manager Penny, of the Dahomey village, asking the physician to come at once to the village and attend a patient suffering from the toothache. The doctor went more for the sake of the adventure than for the fee. He was shown to the bedside of the woman and proceeded to examine the big teeth inclosed in a mouth that opened like a cellar door. To make sure which was the offending tooth Dr. Yeager began prying around with the little steel instrument so familiar to all who have ever visited the chamber of horrors known as "dentist's parlors." He accidentally touched the nerve of the decayed and aching molar, and the Amazon let loose a yell that drew to her side every member of the village.

It was an excited and wildly demonstrative crowd that danced about the woman's bedside. Dr. Yeager coolly continued his work, however, and finally before the woman could prevent him he had sneaked from his pocket a pair of shining forceps and hooked on to the pain-producing worry. Sari was not only astonished, but she was hurt. As the steel instrument went crashing into the gum surrounding the aching tooth the brawny woman gave a howl that set every one of her sisters and the black men wild with excitement. The louder the Amazon yelled the harder Dr. Yeager pulled. She struck wildly at the man at the other end of the forceps, but the doctor's dodging powers are as acute as they were the day he left the college football team. She finally leaped from the cot on which she reclined, and still the doctor pulled at the molar. Sari struck viciously at her torturer, but here the doctor showed great strategy by keeping the woman's head so far in advance of her body that the blows fell short.

Around and around the village went the doctor and the patient. The former tugged and kept cool. The woman made the night hideous with her cries and grew angrier every moment. Still the molar held its own. The men in the village danced about the struggling doctor and Amason and expressed their delight at the spectacle in wild dances and peculiar cries.

For nearly ten minutes this scene was continued. The doctor was growing weaker and the woman was in a mad passion. The former began to think of what would happen to him if he should let go the tooth.

Recollections of the stories he had read about the cruelty of the Dahomey Amazons to their enemies urged him to renewed effort. It was not the question of pulling the tooth so much as it was to maintain the advantage he had over his powerful antagonist.

The end came at last and in a most unexpected manner. Some of the villagers, perceiving that the doctor's strength was almost exhausted and admiring the pluck he had demonstrated by holding on as long as he had, decided to take a hand and separate the man of medicine from the insanely angry woman and at the same time protect the former from injury. Three or four men seized the woman and two Amazons seized the doctor. The two parties pulled in opposite directions, and suddenly the bond that united the doctor and she of the aching molar was broken. At the same instant the woman was thrown over the heads of the attacking party at her rear and the doctor went sailing over the shoulders of those who had seized him.

A moment later Dr. Yeager was seen sitting on the ground holding aloft the forceps, from which projected the offending piece of ivory that once adorned the mouth of the troubled Amazon. The doctor will accept no more calls involving the extraction of teeth in Dahomey village unless he is surrounded by a detachment of the Columbian Guard.—*Chicago Herald*, *during the Exposition.*

GUM LANCING.

Clinically, I am absolutely sure that I have seen convulsions, sick stomach, great restlessness, fever, and various other functional disturbances in young children, immediately cured by the use of the gum lancet, after the failure of various other well-directed measures for relief. Theoretically, I am in accord with Dr. Kirk, in believing that Dr. Forcheimer absolutely misses the point of the matter, by his failure to understand that the good achieved is not due to the local blood letting or to the relief of the inflammation of the gum, but to the removal of the backward pressure upon an extraordinarily sensitive and, at such times, congested tooth pulp. As was long ago pointed out by Dr. J. W. White, at the period of eruption the roots of the teeth are incomplete.

I have myself seen a seemingly incurable epilepsy in an adult permanently cured by the removal of a persistent milk or first dentition tooth. Amaurosis and various other conditions in the adult are well known to be the result of irritation of the trigeminal nerve by faulty teeth. How much more is evil to be expected from teeth-irritation in a child!

In conclusion, I reaffirm that whatever the theory in the matter may be, I am positive that gum lancing is a most important therapeutic measure. It is essential, however, that it should be thorough, and with the object of dividing the dense tissues that bind down the teeth.—*H. C. Wood, in University Dental Magazine.*

RHEUMATISM IN JAPAN.

It is a strange fact mentioned by Dr. Michaut, of Yokohoma, that in spite of its being an essentially moist and rainy country, rheumatism in all its forms is a pathological rarity among the natives of Japan, while the Europeans residing there are almost all rheumatic. This immunity the writer is inclined to attribute to the use of very hot baths which is universal in Japan. The temperature of the Japanese bath is never less than 42° C., and he has been assured that they can endure a bath at the temperature of 50° C. A Japanese bathes once, sometimes twice, a day. His skin is more active than that of Europeans, is thicker and much less sensitive to cold and to external applications.—*Boston Medical and Surgical Journal.*

NIGHT GROWTH.

It is a curious fact that night is the time which nature utilizes for growth. Plants grow much more in the night than in the daytime, as can be proved any time by measurement. Measure a vine at night, then measure it again in the morning and the next night, and it will be found that the night growth is two or three times that accomplished during the day. During the day the plant is very busy gathering nourishment from various sources, and during the night this raw material is assimilated into the plant life.

The same fact is true of the animal creation. Children grow more rapidly during the night. In the daytime, while the child is awake and active, the system is kept busy disposing of the wastes consequent on this activity; but during sleep the system is free to extend its operations beyond the mere replacing of worn-out particles; hence the rapid growth.

This is why so many invalids need so much rest and sleep. The system has been taxed for years beyond its ability to repair the tissues, and hence the organism has become worn and disabled from the accumulation of waste products, and disease has resulted. With the proper conditions restored, and a season of perfect rest, nature will reassert herself, clearing up the clogged and dirty tissues, and restoring the organs to their normal condition.—*Good Health.*

THE CALIFORNIA DENTAL LAW ENFORCED.

During the month of February Dr. John C. McCoy, a member of the State Board of Dental Examiners, swore out a complaint charging one A. F. Schiffman with practicing dentistry without a certificate from the State Board. The defendant demurred to the complaint, and the demurrer was argued upon the constitutionality of the law. The demurrer was not sustained, and the defendant demanded a jury trial, as is always done in these cases. Judge Owens, the attorney for the prosecution, argued that the defendant was not entitled to a trial by jury, and cited the law to such effect that a jury was denied; with the elimination of the jury went also the usual bread and butter arguments of this class of cases.

No effort was made by the defendant to show that he ever contemplated compliance with the law, but had in every particular disregarded it. The trial resulted in the defendant, A. F. Schiffman, being found guilty and fined fifty dollars.

The result of this trial should be far-reaching and some effort made to rid the medical profession of its illegal barnacles.

If the dentists can get a trial without a jury, the same ruling must hold good relative to the physicians, and no one of the many imposters could evade the law if they have no opportunity to juggle with the jury. The dentists have blazed the way; in fact, they have left a graded road.

ANOTHER DEATH FROM USE OF NITROUS OXIDE.

We regret to have to record another death during the administration of nitrous oxide. It occurred in the practice of Mr. Grundy, of Batley. The patient was a miner, aged 39, who had suffered from toothache for some time and came to Mr. Grundy to have them removed. The patient requested to have gas administered. Mr. Grundy proceeded in the usual way, but the patient, after taking four or five very slow inspirations, became unusually livid, or rather dark. Mr. Grundy cleared the air passages by depressing the base of the tongue with the handle of the forceps. He was unable to catch hold of the tongue and pull it out. He then laid him on his back on the floor, artificial respiration being kept up for fully ten minutes, medical help being sent for. At the inquest Mr. Watts, surgeon, gave the following evidence:

He did not know the deceased. He first saw the body of the deceased about half-past three that (Wednesday) afternoon. It was then laid out. The lips and tongue were exceedingly livid. He opened the chest and found the left lung healthy. but very greatly congested. The right lung was also very much congested. The right side of the heart was full of dark fluid blood. The valves of the heart were healthy; the tissue of the heart was flabby and fatty. The liver was healthy, and kidneys were the same, but dark. There was a small quantity of liquid food in the stomach. The scalp was extravasated. The brain was congested both superficially and in its substance, otherwise it was healthy. He considered the cause of death was asphyxia. He considered that weakness of the heart could have been diagnosed from its beats, but as the valves were sound he thought no danger could have been anticipated. There had only been thirteen cases recorded of persons dying while under the influence of gas, and gas had been administered in millions of cases, and only three had been attributed to gas itself. In this case there was nothing else to cause the death, the organs were in such a state, except the heart, that the man was not a person expected to die suddenly. Externally and internally he was considered to be a fair, healthy subject.

After hearing other evidence, the jury returned a verdict of "Died by misadventure," and stated they did not attach the slightest blame to Mr. Grundy.—*Dental Record.*

THE ADMINISTRATION OF ANÆSTHETICS.

A RECENT unfortunate case, occurring in Buffalo, in which a patient died in the dentist's office during the administration of nitrous oxide gas for the extraction of teeth, gave the coroner's jury an opportunity to call for the passage of a law forbidding the giving of anæsthetics unless a qualified physician be present. The dentist at whose hands this distressing incident occurred is not a dental graduate, as he was one of those who were in practice at the time of the passage of the law, twenty-five years ago. No special means for resuscitation were at hand, nor any general remedies to be employed in unfavorable cases. All this was brought out at the inquest, and prompted the recommendation.

At the present time the dentist who graduates at any good school is without doubt as competent so give anæsthetics as is the average medical graduate. He will have listened to lectures upon the character of anæsthetic agents, he will have seen them given many times, and he will have been taught what to do in cases of emergency. He will have been instructed in auscultation and percussion, and will be able to read a pulse and know the heart and lung sounds.

But this the average coroner's juror, and even the ordinary member of the Legislature, will not know. He imagines that all physiological and pathological knowledge is confined to medical men. Unless some steps are taken to show the legislators the true state of the case, some fine morning the dentists of this and other States will awaken and find that it is a misdemeanor for them to give an anæsthetic. This would not alone be a blow aimed at the pocket, but it would lower us in the estimation of the public, and diminish our own self-respect.

To forestall any such possible action, the dentists themselves should take charge of the movement, and have introduced, and should advocate a law forbidding any one except regularly graduated physicians and dentists from giving anæsthetics. The passage of such a law would do much to inform the public, and to convince them that educated dentists understand as well as medical men the giving of anæsthetic agents.—*Editorial in Dental Practitioner and Advertiser.*

CARE OF CHILDREN'S TEETH.

THE importance of the care of children's teeth has called forth so much attention at home that we are glad to be able to reprint the following note taken from the pages of the *Lancet:*

"A tooth is worth more than a diamond," said Don Quixote on a memorable occasion; but the profound physiological truth of the saying has but small practical force even in the nineteenth century. Switzerland holds a bad preëminence in the abuse of this precious auxiliary to digestion; indeed, dentists, British or American, who practice in her chief towns are unanimous in declaring that nowhere is neglect of the teeth, with all it disastrous and (on the side of personal comeliness) hideous consequences, so conspicuous. Not a day too soon the Société Odontologique, of Geneva, in concert with the Minister of Public Instruction, has made a series of visits to the primary schools with the view of examining the teeth of the pupils. Their report, just issued, is fraught with striking revelations, not without relevance, we are afraid, to the same class of schools in other countries. Teeth all the world over, they assert, are degenerating, a result (amongst other causes) of the perfection of the culinary art and the diminished use of mastication. We can, however, minimize this inevitable process and by timely precautions guard against tooth enfeeblement and caries. Every six months the mouths of children seven years old should be examined by the dentist, for at that age the "eventual points of caries" can be treated in time. Later, at the age of ten or twelve, the mischief is already advanced, but not so far as to be quite beyond professional relief. The Société Odontologique, of Geneva, philanthropically makes these inspections gratuitously in the case of primary schools containing that portion of the young generation which is less favorably circumstanced for calling in the dentist. The *modus operandi* of the Society is this: On visiting a school its representative addresses his young audience in popular language on the genesis, the growth, the uses, and the ailments of the tooth and winds up with a practical demonstration of how much may be done to keep it strong and healthy. The first place in this conservative duty he assigns to "attending to the mouth," keeping it clean by washing it and washing the teeth after every meal. The wide-spread neglect in practicing this precaution the Société proves by statistics: Out of 413 boys inspected, 370 (that is, 90 per cent.) never brushed their teeth at all; out of 459 girls, 320 (or 70 per cent.) were equally neglectful; whilst in nearly all of them caries was already declared or far advanced, more than 75 per cent. of these young persons requiring the urgent interference of the dentist. After his visit the Société's delegate draws up a "schema" or dental plan indicating in each case the state of the child's mouth, the teeth to be specially protected and the general treatment to be adopted. This "schema" is sent to the child's parents, who are thus instructed as to what has to be done. In these instructions the Société insists on careful brushing of the teeth from the age of seven and upward as the best means of averting caries, which is so injurious to the general health. "Recent observations," adds the Société's report, "demonstrate in neglected mouths the presence of the majority of the germs or microbes which generate infective maladies. Cleansing the mouth, therefore, is a duty imposed on the community from every point of view." All honor to the Société for its philanthropic work, which, as already hinted, might with advantage be imitated elsewhere.

SEX IN BRAINS.

THE popular fallacy that a woman's brain power is not equal to man's because of its smaller size is illustrated in an amusing little account taken from a German paper by the *British Medical Journal.* Prof. L. Bischoff, the late distinguished physiologist of Munich, was a profound believer in woman's mental inferiority, and devoted much time to making researches to substantiate this claim. As a result of his labors it was given out that while the average weight of man's brain was 1,350 grains, woman's brain was smaller by 100 grains. But alas for the Professor's theories and calculations! Upon his death it was ascertained that his own brain weighed only 1,245 grains, 5 grains less than that of the average woman. If the shades of the departed ever return to this terrestrial sphere, it would seem probable that the brainy Professor could hardly rest in peace until the world had been offered some explanation of this extraordinary phenomenon.—*Woman's Herald.*

CEREBRAL CONGESTION.

A PERSON suffering with cerebral congestion should never sleep with the head low. There is already too much blood in the head; and if the power of gravity is added to the natural tendency of the blood to the head, the difficulty is increased. When the head is raised, the blood naturally recedes from it; the heart has to pump the blood against gravity, and the consequence is, the lower part of the body will have a little more blood than the upper part. So the best position for persons who have a flow of blood to the head is to raise the upper part of the body. This does not mean to raise the head by a pillow or bolster, but to raise the whole upper part of the body; let the bed be raised to an incline. The effect of raising the head only is to compress the superficial veins of the neck, so that the blood cannot readily return. During sleep the head should not be raised above the level of the shoulders, but the whole upper part of the body should be raised.

SUIT FOR MALPRACTICE.

IN an action for malpractice against a dentist at Manchester the plaintiff was awarded £15 damages. It seems that the defendant failed in his attempt to extract the whole of a tooth, one root being subsequently removed by another dentist, moreover considerable hemorrhage followed the attempt, a medical man having to be called in. We candidly confess that if the mere failure to remove a tooth and the subsequent occurrence of hemorrhage constitutes "malpraxis" most of us have been guilty many times over. It would be interesting to know the part played by the medical man and by the second dentist. It occurs to us they may not quite have lived up to the motto: "Do unto others as you would be done by." It is easy enough to fan the flame of irritation in an angry patient, but it is neither right nor just.

BLOOD POISONING FROM TOOTH EXTRACTION.

THE patient, age 28, of Tesh. in Berlin, had a tooth extracted, the operation being performed by a dentist living in "Unter den Linden." Soon after bleeding began and continued from Friday till Monday, so that at last the patient was obliged to go back to the dentist, who now stopped the hemorrhage. But apparently the wound had already become septic, for symptoms of blood poisoning appeared, and progressed rapidly. By Wednesday it was necessary to remove the patient to Bethanien, where, some days later, he died in great pain.—*Zahntechnische Reform.*

CLEANING STEEL INSTRUMENTS.

CLEAN the instruments by rubbing with wood ashes and soft water. Then soak them in a weak solution of hydrochloric acid in water (about ten to fifteen drops to the fluid ounce) for a few hours to remove the rust and grease. Then wash them well in pure soft water. The next step is to place them in a bath consisting of a saturated solution of tin chloride. Let them remain ten to twenty-four hours, according to the coating desired. When removed from the bath wash them clean in pure water and dry well. When the job is well done the steel will appear as if nickel plated.—*Medical Brief.*

BAD FOR SMOKERS.

A CAREFUL record has been kept at Yale College during the past eight years, with reference to the physical condition of nonsmokers as compared with smokers. It has been found that nonsmokers are 20 per cent. taller, 25 per cent. heavier, and have 60 per cent. more lung capacity than smokers. A recent graduating class at Amherst College presented a similar difference in favor of nonsmokers, who had gained in weight 24 per cent. over the smokers, and in height 37 per cent., and also exceeded them in lung capacity.

CAN TUBERCULOSIS BE TRANSMITTED BY THE SEMINAL FLUID?

A SERIES of experiments upon guinea pigs by the injection of the seminal fluid expressed from the testicles and seminal fluid of tuberculous subjects would seem to point to the transmission of tuberculosis by hereditary inoculation. Such is the result of a report submitted to the Societe d'Anatomie et Physiologie a Bordeaux. *Journal de Medicine de Bordeaux.*

A NEW SUBSTITUTE FOR COCAINE.

THE acetanide of Eugenol, from the oil of cloves, a recent preparation, is said to possess local anæsthetic properties. It produces no caustic effects, is highly antiseptic, and therefore superior to cocaine for minor operations of the mucous membrane.

WE notice that in several of the states the Board of Dental Examiners is after violators with a sharp stick. Dr. Edgar Palmer, of La Cross, Secretary of the Wisconsin State Board of Dental Examiners, was in Milwaukee last week looking after some of the dentists. He found that several persons were practicing without having complied with the state dental law. An arrest was made on complaint of Dr. Palmer, the defendant being J. W. Houtz, of 1130 Walnut Street. Houtz was find $10 and costs by Judge Wallber. It was claimed by the defense that the office was the property of a qualified dentist established in another part of the city and run in his interest. The excuse was not sufficient to prevent a conviction, and it is understood that prosecutions of a similar nature will be likely to follow.—*Dental Tribune.*

AFTER a previous and unsuccessful trial, Mrs. Jane L. Fowle, of Dedham, Mass., was recently awarded a verdict against Uriah K. Mayo, a dentist of Boston. Mrs. Fowle came to Boston in 1891 for the purpose of having four decayed teeth extracted. She went to Dr. Mayo, and requested that gas be administered to her, that she might become insensible to pain. She claims vegetable vapor was given in place of the gas, and, further, that when she recovered consciousness she saw standing by the chair a young student, who had extracted a sound tooth instead of a decayed one. She sued for $2,000, and the jury awarded her $450.—*Dental Tribune.*

THE State Senate of Kentucky passed a bill to regulate the practice of dentistry in Kentucky. The bill provides that it is unlawful to practice dentistry unless the person has received a diploma from the Faculty of a dental college, authorized by the laws of that State, some other State, a foreign country, or a certificate of qualification issued by the Kentucky State Dental Association. Any person failing to comply with the regulations of the law is guilty of a misdemeanor and liable to a fine of not less than $50 nor more than

$250. Physicians and surgeons are not barred from extracting teeth. The Board of Examiners is allowed conpensation under the laws of the Association.—*Dental Tribune.*

It has been the custom of dentists to recommend and give phosphate of lime and phosphate food in general, with the idea of supplying that which was wanting—the lime salts of the teeth. You may pack such children in a lime barrel; you can feed them on lime stew and lime hash without effect, for their teeth will not take up a particle more. The lime has to be introduced through the proper channels and in proper form. The digestive department is just as full of red tape as that of any government. All its supplies have to go in a regulated course, without which they are not accepted.—*Prof. Mayr, in Items of Interest.*

Root filling under antiseptic precautions is positive, successful, and nothing is left to chance. The Herbst method is nearly all chance, no certainty about it, has nothing in its favor except as a labor saver of very doubtful utility. We will continue to destroy pulps and remove them rather than build golden nuggets on such an insecure foundation. No mummies under fillings for the editor of the *Dental Review* if he knows it.—*Editorial in Dental Review.*

No matter how brilliant a dentist may be in professional attainment, he cannot long conceal from his fellows any dishonest propensity that may mar his character. The first element of true success in dentistry, then, as in other callings, is honesty.—*Dr. Johnson.*

Where the pulp has been wounded I should simply touch it with camphor. The alcohol in the camphor will evaporate, leaving the camphor itself, which is very healing and cleansing. One may follow the camphor treatment with a little oxyphosphate, or cover it with gutta-percha and go on with his filling.—*Dr. Spaulding.*

The *Medical Record* says that in severe paroxysms of coughing, a tablespoonful of glycerine in hot milk or cream will give speedy relief.

Editorial. . . . .

We extend the season's greeting to all our readers.

The year 1894 launches the first of the "three year" graduates into the ranks of the profession.

The advent of dental technic marks a great advance in dental training.

The *Pacific Coast Dentist* finds fault with Dr. L. D. Shepard in a two page editorial for not having devoted some attention to implantation in his address before the congress. We fail to see the need for so much rankle. Dr. Younger has been honored, he receives credit for all the operation is entitled, and there is no one to dispute his claim to originality. It is evident that it was not in Dr. Shepard's power to notice every deserving addition to dental science by Americans. Were one inclined to criticise the doctor, it would not be hard to mention many names meriting praise as much as that of the distinguished Californian of implantation fame. We do not remember hearing the name of another Californian who *de novo* laid the foundation for modern crown and bridge work. Was he less deserving?

OLD POINT COMFORT, VA.

Old Point has been honored as the meeting place this year for the American and Southern Dental Associations, the National Board of Dental Examiners, and National Association of Dental Faculties.

The American will meet the first Tuesday in August, the time fixed by the Constitution; and the Southern, the week previous.

Dr. B. Holly Smith, President of the Southern, is marshalling his forces to hold the most successful meeting in the history of the Association. Dr. E. P. Beadles, Chairman of the Committee on Arrangements is already making preparations for its reception and entertainment.

This is the first time these bodies have ever consecutively held their meetings at the same place. It will have the advantage of bringing many men to the most magnificent seaside resort for two weeks' recreation, and afford an opportunity for social intercourse never before enjoyed by so many and such representative men of the profession as compose the membership of these great organizations.

Begin with the New Year to make your plans to be among those who are to enjoy this pleasure.

Those dentists who attended the Southern Association at Hygeia in 1887 never tire of praising it as a charming hotel and a very desirable place for holding an association.

CEMENTS.

This subject is attracting much attention just now. The Section on Operative Dentesty in the Columbian Congress listened to a clear, forcible paper by Dr. W. B. Ames on the subject, in which he gave the results of experiments with almost all the different preparations on the market. The Odontological Society of Pennsylvania has recently considered the subject introduced by Dr. E. T. Darby. The views of these gentlemen are in the main the same. Cements, like cigars, soon begin to deteriorate. The loose manner of mixing has much to do with results obtained in their use. The fault is not always with the dentist, but often the manufacturer's directions are insufficient.

Haste and carelessness in combining the fluid and powder, and the use of too great a quantity of fluid are the most common causes of poor results. Another is the failure to protect from contact with the fluids of the mouth. Chloropercha and melted paraffine are the two most available protectors.

Dr. Ames recommends for fillings a combination of the powder of the Harvard and liquid of Justi's lapidescent. Dr. Darby strongly recommends Poulson's.

In our hands the Harvard has the objection of being too slow to set. For bridge and crown work, this is not a great objection, as the application of heat will overcome it in a great measure. The powder is far superior to any we have yet worked.

From the concurrent testimony we draw the conclusion that the ideal cement has not yet been produced, no one in the market answering all the requirements.

The silent death of the pulp, to be followed by all character of reflex pain along the various ramifications of the fifth pair of nerves, is a more frequent result following the use of phosphate of zinc than is often recognized by those using this preparation in temporary and badly decayed teeth of a poor organization. The dentine should always be protected from actual contact with it.

Until some plan can be suggested by which just the proper amount of powder may be incorporated with just the right quantity of powder there will exist a difference of opinion and different results must be obtained.

Rightly mixed and thoroughly hardened before exposed, the character of the secretions has much less to do with its durability than was formerly thought.

THE TENNESSEE DENTAL ASSOCIATION.

It has been announced that the next meeting of the association will be held in Nashville March 26–29 in the hall of the Nashville Academy of Medicine.

The Executive Committee has issued a circular letter which we publish in this issue. It should meet a prompt response. There will be no great congress or World's Fair this year to attract the profession elsewhere, and the association should be well attended.

For the first time in several years the association comes to Nashville, and a most hearty welcome will greet all who come.

There are too many who do not attend the State Association. Every man who feels any interest or pride in his profession should contribute a few days of his time with others to these annual gatherings.

The change of the date of the meeting we hope will have the effect of increasing the attendance. March is not a busy month with dentists, and certainly that will not excuse any one.

Don't let the recent financial depression, which we hope is over, deter any one from coming. Hold your head up, confidently assert that your business is good, and help restore confidence.

Dr. Morrison, President of the association, is at work stirring up the brethren, and proposes to labor for this meeting and the comfort, pleasure, and interest of those who attend from now until it adjourns.

Never was there a time when more interest was manifested by the profession in its work, or when the public was supporting more heartily its efforts.

Dentistry to-day is doing more to alleviate suffering, for its prevention and to repair the ravages of disease than ever before. Come then prepared to contribute something to the furtherance of this great work.

VAUGHN VS. VANN.

The suit for malpractice recently decided at Gadsden, Ala., in favor of the defendant was brought by Mrs. Effie Vaughn against Dr. George S. Vann, because he "undertook to extract said teeth in such a negligent and careless manner as to break and shatter the bones about said teeth, and take out large portions of the bones that grew round and about said teeth." For the loss of this process and the shock incident thereto Mrs. Vaughn thought Dr. Vann should pay her five thousand dollars.

It is due Dr. Vann to say that an attempt had been made previously to extract the teeth, a superior cuspid and a first bicuspid, by a physician, who broke both off, leaving the pulps exposed, then sent her to Dr. Vann, and the removal of the alveolar process was nothing more than is usually necessary in such cases.

The suit was, however, the result of a hasty criticism from another dentist. The patient returning the next day after the extractions for more dental work and failing to find Dr. Vann, went to another office, the proprietor of which alarmed her by asking "who had so lacerated her mouth," and remarking "he should be sued for malpractice." It is possible that he little thought a suit would result from so careless and thoughtless a censure.

This is a fine illustration of the impropriety of sitting in judgment on others. It is no part of the duty of a dentist to criticise the work of another. It shows a mean, jealous spirit, is unjust, and always a reflection on the judgment of the patient, and aside from ethical considerations is unsafe and unwise.

RESOLUTION OF THANKS.

At a meeting on October 24, 1893, the Tennessee dental students of Vanderbilt University were called to order by Dr. Sanders, as Chairman, for the purpose of appointing a committee to draft resolutions of thanks to Dr. W. W. Jones, of Murfreesboro, Tenn., for a paper, emanating from his pen, published in the Dental Headlight, and which he read before the last meeting of the Tennessee Dental Association. The committee reported as follows:

1. *Resolved*, That we thank Dr. Jones for his paper entitled "The Dental Law and Its Relation to the Student," and for his evident interest in the student, who would be advanced by practicing his profession during the interim of lectures; also the student who is compelled to pay his own way.

2. That we petition the Tennessee Dental Association to act upon the thoughts outlined by the valuable paper, and consider the advisability of issuing to the student a temporary license which will release him from the embarrassing position in which he is now placed.

3. That we send a copy of these resolutions to Dr. Jones, also one to the DENTAL HEADLIGHT for publication.

W. Z. MCELROY, *Chairman*; A. BLOXOM,
L. T. WYLLIT, J. E. MCGOWN.
A. D. CAGE, *Secretary*.

BOOK NOTICE.

NEW TRUTHS IN OPTHALMOLOGY, as developed by G. C. Savage, M.D., Professor of Opthalmology in the Medical Departments of the University of Nashville and Vanderbilt University.

The author has well earned the distinction of an original and successful investigator in his chosen speciality, and has added many brilliant ideas and new and skillful operations to the great science of opthalmology. We feel proud to have such a genius in our midst, one who has attained eminence as a teacher and world-wide fame as a practitioner of opthalmology. Amongst the many interesting and practical subjects treated of we note the following: Action of the Oblique Muscles in Oblique Astigmatism; Insufficiency of the Oblique Muscles and How to Correct Them; Rhythmic Exercise the Proper Method of Developing the Ocular Muscles; The Law of Projection and the Natural and Artificial Causes Which Modify it; The Necessity for Complete Suspension of accommodation by Mydriatics in the Adjustment of Glasses.

MARRIED.

DR. C. K. WRIGHT, at Wilson, N. C., and Miss Alice G. Barnes, daughter of Mr. F. W. Barnes, President of the First National Bank of that place.

DIED.

AT Clarksville, Tenn., December 2, 1893, Mr. H. E. Beach, Jr., the second son of Dr. H. E. Beach, in the twenty-ninth year of his life, a useful man, a kind, considerate husband and father, an honored and worthy son of a loved and highly respected father.

'Tis only the actions of the just
Smell sweet and blossom in the dust.

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ADDRESS OF EXECUTIVE COMMITTEE TENNESSEE DENTAL ASSOCIATION.

NASHVILLE, TENN., December 8, 1893.

IT has been decided to hold the next annual meeting of the Tennessee Dental Association in this city, Monday, March 26–29, at the hall of the Nashville Academy of Medicine.

The dental colleges will be holding their Commencements at about that time, and it is intended to give members an opportunity to be present at the closing exercises. The new graduates may, at the same time, go before the State Board of Dental Examiners, which meets with the T. D. A., and register.

May we count on your attendance? We earnestly solicit your presence.

Will you come prepared to contribute something to the interest of the meeting in the shape of a paper or a clinic?

It is expected that several distinguished dentists from other cities will be here with all they can bring that is new and instructive. It will do you good to meet them, and besides the local profession will spare no effort to make this socially the best meeting the society has ever held.

As the time is short, and we want to print your name and subject of your essay or clinic upon the programme, we beg an early reply.

Yours fraternally,

L. G. NOEL,
R. M. BOGLE,
J. P. MCDONALD,
Executive Committee.

TENNESSEE DENTAL ASSOCIATION.

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DENTAL HEADLIGHT.

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Original Communications.

ADDRESS OF DR. W. J. MORRISON, PRESIDENT OF THE TENNESSEE DENTAL ASSOCIATION.

Ladies and Gentlemen, Fellow-members of the Tennessee Dental Association: The importance of associations of this kind, for the advancement of science in this age of rapid development, is becoming more apparent every year; and the vital necessity of attendance upon the meetings of such associations has long been recognized by the better element of the profession, as well as by those who desire to gain all the knowledge in their power and keep abreast of the times in their chosen vocation.

In this respect, as in many others, the science of dental surgery leads. This was clearly demonstrated at Chicago, in August, 1893, for never in the recorded history of the world has there been such a convention for the advancement of a specialty in medicine as the World's Columbian Dental Congress, where there was officially represented nearly every civilized nation on the globe, with the exception of that nation which has never been noted to excel in anything but tyranny and the oppression of the weak and defenseless; a nation whose bullheadedness and bigotry never allowed it to recognize the advancement, superiority, and inherent rights of any people; and if they dared to exert them, they must at once be crushed out of existence. In 1776 this British nation tried to crush us because we asserted our rights and demanded that which we were entitled to; yet it had to suffer defeat, and lost one of its most valued prizes.

In 1812 it undertook to crush us again for the same reason, and had to suffer the humiliation of defeat at the hands of a Tennesseean; and in 1893 it undertook to crush American university diplomas and the World's Columbian Dental Congress, because we asserted "our rights" that America leads the world in dental surgery.

Just think of this, by a nation that is so far behind us that its mothers' children do not erupt their teeth for from one to two months later in life than an American mother's child. I believe that when this insult to American diplomas is properly presented to that executive Samson who now occupies the presidential chair history will repeat itself in respect to this arrogant nation. I believe that the President of these United States will maintain the dignity of our government and its universities if he, through Congress, has to place an embargo upon British commerce.

Dental Law.

The most ominous signs that threaten this grand and glorious nation of self-governed people are that patriotism is dwindling into insignificance, honest ability and sound judgment in politics is becoming a thing of the past. The cavalier, the educated gentleman of ability, and that grand balancing factor under all conditions, the man of practical sense and good judgment, are becoming scarce in legislative halls, and their places are being filled by the cracker from the country and the ward politician from the city. They are the representatives of rings, and their motto, curtained behind a smooth and oily tongue, is "the people be damned." It is with sorrow and humiliation we realize that men of such sentiments and character are forcing themselves into lawmaking assemblies in this section, which has always been the conservative element of the nation, with a people that would maintain even unto death their convictions of what was right.

The law that regulates the practice of dentistry in this State is a mean pretense at protecting the public, the clause that prevents the act from applying to those who extract teeth overshadowing all other defects, *for from an anatomical and a physiological standpoint in crime*, next to the abortionist, ranks the ruthless extractor of human teeth; and while in the aggregate the damage done by the perpetration of the crime of extracting is greater to the human race than that of the former, the State of Tennessee has specially and emphatically set forth upon its statute books that it shall be lawful for any one to perpetrate this crime upon its citizens. As a consequence, we have fiends in human shape offering all kinds of inducements to entrap the poor and ignorant. It is your duty as a citizen, a duty you owe to the community in which you live, to use every endeavor to have that section of the law repealed that admits of such abuses, and to have it so adjusted that it shall be the duty of the grand jury to inquire if the law is being violated, and indict the violators.

In this respect there is a mistaken idea as to the enforcement of the law as it now stands. A great many dentists think that it is the duty of the Board of Dental Examiners to have violators indicted, when, in fact, it is not their duty. You, as a citizen, to maintain the dignity of the law, must have violators indicted, and then notify the Board, who will conduct the prosecution.

It would be to the interest of all conservative life insurance companies to increase the rate of insurance in States whose laws permit mountebanks to extract the teeth of its citizens, thereby reducing the average of human life.

Advance of the Profession.

From a position of reputed inferiority we have risen to the rank of an acknowledged branch of scientific medicine, and the *status* of dentistry to-day is most gratifying. For many years every force and pressure of intellectual progressive effort has been brought to bear for a higher standard of qualifications; and so well have they availed that to-day this branch of the healing art by its example has forced the M.D.'s to protect their position by a longer course of study and higher qualifications for the positions they assume, and I hope the day will come when the title of M.D. will be the preliminary step required of every student before entering upon a course of study for D.D.S.

We must remember that "eternal vigilance is the price of safety," and not only is our profession subject to the danger of being degraded, but that of the ministry and the law also. Mr. Granberry sounded the warning to the profession of the law last year at Lookout Mountain, in his address upon the "Shyster and the Razor Back," in which he said that the public was inclined to take this class of its members as a standard by which to rank the profession. We have only to read the indorsements, with accompanying photographs, by ministers of the gospel, of patent and proprietary nostrums, and examine into the mode by which they make the gospel their stock in trade from which to peddle out their sermons to syndicates, and to listen to the language of the gutter hurled from the pulpit, to take warning from this direction.

The Code of Ethics

should make your welfare secondary, giving the good of the community first place, and should embody rules to that end. If it should be shown that society would be benefited by requiring a periodical assembling of the profession for their advantage and the interchange of ideas, the law of the land should require that the ethical laws be so observed. I have no hesitancy in asserting that a professional man who does not use every endeavor to keep abreast of the times is not worthy of the patronage and confidence of the community, and the State should protect her people from him.

Fees.

Consultation and examination fees should be a rule, and if those practitioners who are so overrun with patients that they have no time to attend association meetings—and if they do put in an appearance it is to beg to be excused on account of patients awaiting their services—should never deviate from this rule, they would get pay for their valuable time, and the immunity from "shoppers" would afford them a leisure that might be given to association work, either State or local.

Dental Literature.

We should endeavor, for the advancement of the professional standard, to subscribe to those journals which maintain their dignity. We know that some of our best journals are run in the interest of and by nostrum venders; others contain all kinds of cartoons of the teeth and human anatomy, coupled with would-be comic verses. This latter class of literature should never be allowed to enter your office.

The Secular Press.

A standing committee on publication for the secular press should be considered in the work of this Association; and, while I fear this is about fifty years in advance of the ideas of some of the members, I hope that this Association will have the honor of formulating such a course. You may take all the colleges, universities, public, and private schools, and they do not accomplish, in the general education of the masses, that which the secular press accomplishes.

By having a committee to procure the publication of such articles as would be ably written in such a manner as to benefit the public, and not as an advertisement for the author, the good accomplished for humanity in one year would be greater than all the instructions given by dentists throughout the country in twenty years. Unfortunately, the ignorant sufferers, who are in more need of information upon such subjects than the more intellectual ones, think the doctor's instructions are to make more fees for himself.

Short and comprehensive articles on the care of the young mother's teeth, the care of the children's teeth, the wonderful phenomena of reflex nervous action, facial neuralgia superinduced by dental irritation, would be of incalculable benefit to the community.

Dental Schools.

I would that I could convey to you all that crowds upon me in reference to this subject in respect to all they have accomplished and what they might accomplish; but, like all other human institutions, they must be forced into line and be compelled to keep abreast of the times.

I must insist that if you would maintain the standard you desire for your profession, if you would protect your wives and children from being pointed out as a member of the family of Blank, the *tooth carpenter*, or "he is nobody but the son of Short, the *tooth snatcher*," you must not, as a preceptor or adviser, recommend a school, no matter how perfect its equipment or how many professors it may have, that instills into the student that dentistry is a trade.

There is a moral responsibility attached to your position in this respect which demands that, before you advise a young man the school to select, you examine into the character of the men under whom he is to receive instruction, from the Dean to the demonstrator; and if they are not honest in principle as well as in practice, you jeopardize the prospects of your confidant and are adding recruits to undermine the standard of your calling.

I would call your attention to the custom some institutions have of employing men that are out of *steam dental parlors:* places that have the front of their houses covered with advertisements and pictures of the beautiful plate work that the victim can have inserted a few moments after he has had all his teeth extracted *without pain*, at $3 a sitting, and a handsome watch and chain given to the lady who will entice the largest number of victims into this den.

The young student, having to associate with men from such places, is impressed by the stories of the fabulous wealth accumulated by the proprietors of such institutions; and when he commences the struggle for practice, which is slow in materializing, he can see no reason why he too cannot reach out and procure the golden fruit. If you will inquire where this class of men were educated, you will, as a rule, find that something was wrong in the teaching and the principles inculcated by the teachers.

I would also suggest that you examine into the equipments and appointments of dental schools, and guard the boys against those which are not properly equipped with laboratory fixtures and operating rooms. Above all, do not indorse or recommend a college that has not complied with the laws governing dental colleges, the diplomas of which cannot be recognized by Boards of Dental Examiners. If you do not maintain and support the Boards of Dental Examiners throughout the country, as the people expect you to do, the dental law will be a dead letter.

The student has a right to have the best that his often hard-earned money will procure, and men have no right to rent a room and advertise to the world that they are going to conduct a dental school, and not be prepared, either in appointment or Faculty, to give the student the advantages he should have at such a place, and after he has spent his money and lost his time issue to him a diploma that he soon finds is not worth the paper it is printed on.

In conclusion I will say that great statesmen may receive the plaudits of a nation and have their names enrolled upon the pages of history, yet they will fade and pass into oblivion; great generals may have their names carved into marble columns that will crumble into dust, and become the food for the hungry moss; but the opportunities of your profession confer upon you the high and holy privilege of having *your* names enrolled upon the leaves of the book of life, there to become brighter and brighter throughout eternity.

CONGENITAL FISSURES OF THE UPPER LIP AND THE VAULT OF THE MOUTH.*

BY JOHN S. MARSHALL, M.D., CHICAGO.

Mr. President and Members of the Society: The subject matter of this paper has been prepared at the suggestion of your Executive Committee, consequently I shall have no need to apologize save for the manner of its presentation.

Fissures of the upper lip, superior maxillary bones, and soft palate are the result of arrested development of the parts involved, and consequent failure of these parts to form a junction and coalesce.

The fissure may be of any degree from a slight notch in the lip, or a bifurcation of the uvula, to a complete cleft of the lip, alveolar process, palatine process, palate bones, and velum palati; or a double cleft of the lip and bony palate and almost entire absence of the velum.

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* Read before the Tennessee Dental Association, Nashville, March 26, 1894.

The slightest degree of fissure is represented by a superficial notch or scar in the upper lip, while in another direction by a mere suggestion of a bifurcation of the uvula. The most common forms are fissures of the lip and the velum. Fissures of the lip often occur without cleft of the velum, or maxillary bones, while on the other hand cleft of the velum frequently occurs without fissure of the lip. The cleft in the palate may even extend forward to the alveolar process, and still not be associated with a fissure of the lip; but where the fissure extends through the alveolar process the writer has always found it associated with a fissure of the lip.* "In some rare instances, however, the alveolar process alone may be fissured."

Fissures of the lip and palate may be *unilateral* or *bilateral*, but are most frequently unilateral and most commonly upon the left side.

Bilateral fissure of the lip and maxillary bones with median cleft of the soft palate occasionally occurs. The writer has treated four cases of this character associated with extensive protrusion of the intermaxillary bones. In each of these cases there was no union of the palate process with the vomer on either side.

In exceptional cases the fissures may extend upward on either side of the nose or may extend backward, involving the base of the skull. Median fissure is very rare. Salter † mentions three cases: one described by Rokitansky, one met in his own practice, and a specimen in the Museum of the Royal College of Surgeons, London. Occasionally there is an entire absence of the intermaxillary bones and consequently of the incisor teeth.

In Salter's case of median fissure the right intermaxillary bone was slightly deficient, with absence of the central incisor; the lateral, however, was in position standing close to the cuspid and separated from the left central by a deep fissure.

A. Broca ‡ has reported quite recently a case of complete fissure of the upper lip, with absence of the median tubercle.

Median fissure of the face is more often associated with the lower lip and inferior maxilla than with the upper portion of the face. A remarkable case of this character is reported by A. Wölfler § as occurring in an infant that came under his notice when it was twenty-three days old, in which the lower lip was cleft, the inferior maxilla separated upon the median line, but held together by a cicatricial band; the fissure extending downward into the neck to the suprasternal fossa; the anterior portion of the tongue was likewise divided into two halves upon the median line. These deformities were successfully corrected by surgical operations.

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* Cole's "Deformities of the Mouth."

† "Dental Pathology and Surgery," p. 372.

‡ *Bulletin de la Société Anatomique*, Paris, October, 1891.

§ *Centralblatt für Chirurgie*, Leipsig, May 28, 1892.

Sometimes there are other defects of development associated in the individual with fissure of the palate, due to the same general causes. These defects are occasionally of an extreme character and serious nature, and interfere with the performance of the natural functions of the body.

Ætiology.—The causes of harelip and cleft palate are to be sought for among the prenatal influences, and are generally conceded to be faults in the developmental process. These influences, to be operative, must occur prior to the tenth week after conception. The formation of the maxilla begins at a very early period of intrauterine life—viz., at about the twenty-eighth day—by the development of four tiny buds, tubercles, or processes, near the central portion of that surface of the rudimentary head which is destined to form the face, $_{\bullet}{}^{\bullet}\;{}^{\bullet}{}_{\bullet}$, which are denominated the superior or frontal processes or tubercles and the lateral or oblique maxillary processes or tubercles. The superior processes elongate downward, and at the same time approach each other toward the median line, where they finally coalesce to form the intermaxillary bones and the central portion of the upper lip. The lateral processes likewise elongate and approach each other toward the median line, where they finally meet the superior processes and unite with them, thus forming the lateral halves of the superior maxillary bone, palate bones, the cheeks and lateral portions of the upper lip, and the velum palati.

Nonunion of Superior and Lateral Processes.—The frontal processes occasionally fail to unite upon the median line; but it is not uncommon for the oblique maxillary processes of either side to fail to unite with the frontal processes, and occasionally both sides fail; thus, in the former, producing a fissure upon the right or left side; and in the latter, a double fissure.

Fissures of the lip are the result of the same causes—viz., failure of the central portion of the lip to unite with the lateral portions, while clefts in the velum palati are the result of a nonunion of the lateral halves with its fellow upon the median line.

Arrested Development.—In many cases there is a deficiency in the various tissues which go to make up the complete superior maxillary bone, palate bones, lip, and soft palate; hence the primary cause would seem to be an arrestation of the developmental process in these particular parts. The writer has seen several cases in which the velum palati, especially, was very deficient and only rudimentary in character, while in others there was a marked deficiency in all of the tissues of these parts, leaving a broad, yawning aperture.

The extent of the fissure will depend very largely, if not entirely, upon the time at which the arrestation of development occurred: the earlier the period the more extensive the cleft, and *vice versa.*

At about the fortieth day after conception the superior and lateral processes have united, and by the end of the tenth week the vault of the mouth has been completed by the union of the velum palati and uvula through their entire length. This process begins at the anterior aspect and progresses backward, the uvula being the last portion to unite.

In certain cases of harelip and cleft palate there is a sufficiency of tissue, and in these the only fault seemingly was a failure of union of the parts at the proper time. Surgical treatment of these cases in the early months of infancy many times secures normal position of the parts and a complete restoration of function.

The fundamental influences, however, which underlie the causation of these defects in development have not yet been reached, and all theories which have so far been advanced to account for them belong to the realm of speculation and conjecture.

Faulty Nutrition.—Some have thought it to be caused by a fault in the diet, through the exclusion of meat as an article of food, or the introduction of an insufficient quantity of calcium phosphates into the system of the mother during gestation.

As an argument in favor of this view it might be stated that the lions in the Zoölogical Gardens of London were fed for several years upon meat from animals having bones too large for them to crush and swallow. This was followed by the birth of cubs with cleft palate—99 per cent.—who lived but a short time from their inability to suckle. The lions were then occasionally given a small animal, like a goat or a sheep, the bones of which were readily crushed by their teeth, and the young afterward born had perfectly formed palates.

At the Zoölogical Garden of Dublin a like experience was encountered, and was counteracted by feeding the pregnant lions with ground bones and foods containing calcium phosphates.[*] Dr. J. Ewing Mears reports the same condition prevailing among the offspring of the lions at the Philadelphia (Pa.) Zoölogical Gardens.

Neither of these arguments is entitled to very much weight, for the reason that it is a fairly well established fact that union of the superior and lateral maxillary processes in the human subject is not dependent upon ossification of these structures, for union or coalescence takes place in advance of ossification and this process is not completed along the line of the sutures until some time after birth.

It is also a well-established physiological law that in a pregnant woman, if there is not a sufficient amount of calcium salts ingested to support the extra demands made upon the system for the proper development of the osseous framework of the fetus and to recoup the waste in her own tissues, the material already stored up in her body is drawn upon to supply the demands of the fetus.

Changes in the constituent elements of the bones are of common occurrence as a result of malnutrition.[†] Dalton says: "Next to the chloride of sodium, the phosphate of calcium is considered the most important ingredient of the body. It is met with universally in every tissue and every fluid; and whenever the nutrition of the bone during life is interfered with from any pathological cause, so that its phosphate of calcium becomes deficient in amount, a softening of the osseous tissue is the consequence, by which the bone yields to external pressure and becomes more or less distorted."

In fractures occurring during gestation union is often delayed, sometimes until after delivery.

Padieu describes a case in which fractures of the tibia and fibula occurred nine days after the suppression of the menses, and in which union was delayed until the end of gestation. The process of union began ten days after delivery, and was completed at the end of a month.

The pelvis, though looked upon at all other times as a comparatively solid framework, frequently becomes relaxed in its articulations during pregnancy, so that the sacro-iliac and pubic joints become movable.

Many women are in the habit of discarding from their aliment during pregnancy all those foods which contain an abundance of calcium salts, and restrict themselves as nearly as possible to a fruit diet, believing that by such practice the bones of the child will be imperfectly calcified, and thus parturition be robbed of much of its suffering. There is, however, no scientific evidence that such a result is obtained; while on the other hand, as in those cases affected with hyperæmosis, though the child when born may be small and much emaciated, it has the appearance of being properly formed and its bones as dense as in the majority of normal pregnancies.

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[*] *New York Medical Journal.*

[†] John S. Marshall, "The Oral Cavity of Pregnant Women," *Journal of the American Medical Association*, 1889.

Heredity.—The question of hereditary influence is one that calls for more than a passing notice, for *a priori* it would strike one as likely to be an important factor in the production of defects of development. The facts which have been deduced, however, are not of sufficient strength to establish it.

A few isolated instances have been reported in which there seemed to be an indirect inherited tendency in a certain family to produce offspring with this deformity.

Oakley Coles * mentions two families in which there was a marked tendency in this direction. In the first family there were three with cleft palate: one seventeen years of age, another thirty, and the third thirty-five. The first and the last were ladies. The gentleman, who is married, has a family without a single instance of their father's deformity. The second family was composed of five children, two of whom had fissure of the lip and palate; the first child was born perfect, the second had single harelip and cleft palate, the third child was perfect, the fourth had double harelip and cleft palate, and the last child was perfect. The maternal grandmother also had cleft palate.

Lawson Tait † also believes that heredity is a strong factor in the production of this deformity, and says that he has known it to skip three generations and then appear in a hereditary form.

E. F. Plicque ‡ reports a case of harelip in a female in which he thinks the deformity is undoubtedly inherited. The family history is as follows: Both parents of the patient were entirely free from any congenital defect. One of her father's brothers had supernumerary fingers. A brother of her mother was born with harelip, but both of his children were free from the deformity. His sister, the mother of the patient, has given birth to nine children, five of whom had harelip but no palatal defect. Another sister of the patient's mother who was free from congenital defect gave birth to two children with harelip and cleft palate of an uncommonly severe type. A brother and a sister of the patient, both of whom had congenital harelip, had married, but none of their five children had any sign of the defect.

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* "Deformities of the Mouth," p. 28.

† *British and Foreign Medico-chirurgical Review*, July, 1870.

‡ *Le Progrès Medicale*, Paris, 1891.

Manley* says that in all of his cases there was either a history of heredity or of maternal impression.

The writer recently operated upon a child six months old with double fissure of the upper lip and hard palate, with protrusion of the intermaxillary bones and only rudimentary velum, this being the second child born of the same parents in whom the tendency was marked. The first child was born with fissure of the left side of the upper lip, the second was born perfect, and the third with the defect first described. There was no history of similar defects of development in the family of either of the parents.

Maternal Impressions.—It is interesting to note in this connection that most women who are so unfortunate as to give birth to deformed children, especially those with deformities of the face and mouth, feel very confident that it is the result of maternal impressions induced by fright, the sight or knowledge of a like deformity, etc. How much, if any, there may be of scientific truth in this popular notion the writer is not prepared to say, more than that in all popular notions there is generally somewhere hidden away a kernel of truth. When we know more about the influences which the nervous system exerts over cell life, the effects of the physical and mental conditions of the parents at the time of conception, and of the female parent during gestation, we shall be better able to consider the question from a scientific standpoint. Till then it would be mere speculation.

Prognosis.—Most of the fissures and perforations of the hard palate are susceptible of radical cure by plastic surgical operations, the exceptions being those cases where there is marked deficiency in development, or loss of tissue; and even in these there is reason to hope that the operation of transplanting new tissue from some adjacent locality will be so perfected as to become not only feasible as an operation, but successful in reëstablishing the functions of the parts. In clefts of the velum palati where the fissure is very wide and the deficiency in tissue is considerable it is better to depend upon the artificial velum, rather than to attempt a cure by surgical measures; for unless the velum can be restored to its normal length, so as to perfectly close the naso-pharyngeal opening, the operation would be a failure, for restoration of function is the main object in view.

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* *New York Medical Journal*, 1891.

The enthusiasm of the surgeon has many times carried him beyond the limits of a wise conservatism in the treatment of these cases, especially in operations upon the velum, with the natural result: failure. Consequently there are those who deny all attempts at cure by a surgical procedure, and maintain that in all cases mechanical appliances accomplish the best results in restoring the functions of the parts. A wise conservatism in both directions will, in the writer's opinion, give the best results in the individual case, for in no department of surgery is good judgment of more value to the patient.

Experience has taught the writer that skillful operations for the closure of fissures of the palate, when performed during the early months of infancy, are more successful in restoring the functions of deglutition and articulation than when postponed, as is generally advised, until after the eruption of the deciduous teeth, or even as late as the fifteenth year. In order to obtain the best results the operation should be completed before the child begins the first attempt at articulate speech. When delayed until after speech has been acquired, it is much more difficult to overcome the peculiar nasal tone that always accompanies the voice in persons with perforations or clefts of the bony palate or velum. Another factor in favor of early operation is the facility and comparative safety with which infants can be brought under the control of anæsthetics, and the ease with anæsthesia can be maintained, and this is a great *desideratum* in all operations upon the mouth. Chloroform has the preference with the writer. In complete clefts of the superior lip and maxilla there is a noticeable broadening of the face upon the affected side; the distance from the median line of the apex of the nose to the antero-inferior angle of the malar bone is greater than upon the perfect side, and there is also accompanying this a decided spreading out and flattening of the ala of the nose. When the lip has not been closed, this broadening of the face and flattening of the ala of the nose increase with the growth of the individual. On the other hand, in those cases where the lip has been closed early this widening is not only prevented, but there seems to be a slight narrowing of the cleft, due, no doubt, to the muscular contraction of the united lip. An early operation should therefore be recommended for the closure of the lip and, where the strength of the child will permit, of the fissure of the bony palate and velum as well, provided the condition of the velum gives promise of successful restoration of function. A second operation for the closure of the velum can be done a few months later if the condition of the child is not favorable for such procedure at the time of closing the fissure in the hard palate.

Operation.—Billroth* has recently modified the Langenbeck operation for closing fissure of the hard palate and velum, by approximating the internal wings of the sphenoïd. This he accomplishes by dividing the mucous membrane at the sides of the velum, and fracturing the bone with a chisel. The mucous membrane is then utilized to close the cleft. His object is to do away with the necessity of dividing the muscles of the velum, particularly the circular or sphincter muscle which surrounds the naso-pharyngeal opening, and which has its anterior fibers in the velum palati.

Rotter,† of Munich, describes an interesting case of a child six years old upon whom he had operated previously by the Langenbeck method for an uncommonly wide fissure. The muco-periosteal flaps had united upon the median line by first intention through their entire length, but left an opening upon the left side near the teeth about four-tenths of an inch in width, giving free communication between the mouth and nasal cavity. To close this opening he raised a flap of skin from the forehead, having a long pedicle attached, and the gap in the forehead was immediately closed with sutures. He thus placed upon the raw surface of the flap numerous epidermal grafts after the method of Thiersch, placed the flap against the forehead with the raw surface undermost, and held it in position by a bandage.

At the end of eight days the grafts had taken and the flap was covered with skin upon both sides. The next steps were to lengthen the incision along the right side of the nose to the cleft in the lip, raise the right ala of the nose, freshen the edges of the opening in the palate, stitch the flap into position, close the fissure in the lip, and replace the ala of the nose.

The case was successful, and Rotter exhibited the child two years later to the Congress of German Surgeons. One of the remarkable facts in the case was that, though the flap was covered upon both sides with skin, the moisture in which it was constantly bathed seemed to have no deleterious effect upon it.

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* *Wiener Medizinische Medicin,* 1890. †*Munchener Medicinische Wochenschrift,* 1890.

Rotter states that only two other cases are on record in which tissues had been transplanted for a like purpose from other locations than the palate itself: the first by Blaisus, the second by Thiersch.

Christian Fenger,* of Chicago, has lately devised a new operation for harelip, which consists essentially of utilizing the parings of the fissure to lengthen the border of the lip, splitting the edges of the flaps and uniting the edges of the mucous membrane and the skin by separate lines of sutures, this part being similar to the operation of Tait for uniting the lacerated perineum, and also of Marcey's operation for closing the velum palati.

Truman W. Brophy,† of Chicago, has recently devised a new method of approximating the edges of fissures of the palate, which is unique and original, and for which he claims a decided advantage over other operations.

The method consists substantially in passing two double silver wire sutures through the superior maxillary bone, within the mouth. The posterior one inserted just *behind* the malar process and high enough to pass over the palate plate of the bone, emerging at the same point upon the opposite side; the anterior one is passed through the bone just in *front* of the malar process. A lead button having two eyeholes is threaded upon the wire, and the ends twisted together. The edges of the cleft having been previously freshened, the wires are twisted until the edges of the cleft are brought together. If the resistance is such that the edges do not readily approximate, the malar process is divided on either side by the aid of a heavy scalpel. The edges of the cleft are united by sutures in the usual way.

This operation would seem to be valuable if performed during the early months of infancy, while the bones are still imperfectly calcified, in those cases where the deficiency of tissue is slight, and the edges of the fissure but moderately separated; but where the cleft is wide and the deficiency of bony tissue considerable, it might succeed in closing the defect in the palate; but it would establish another deformity equally grave in character—viz., partial or complete stenosis of the nasal passage of the affected side. It is to be presumed therefore that Dr. Brophy would not advise this operation except in selected cases where this condition could not result.

In the cases first mentioned it would seem to have an advantage over the Langenbeck muco-periosteal operation; but in fissures of any considerable width, or in double fissure, the latter procedure would be preferable.

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* *Journal of the American Medical Association*, 1893.

† Read before the World's Columbian Dental Congress, 1893.

In cases of single cleft of the lip and palate the writer advises the closing of the lip as soon after birth as the condition of the child will permit, and the operation upon the bony palate and velum from the sixth to the twelfth month.

In operating for single harelip preference is given to the Mirault method as most likely to produce a lip of normal length and width. In closing the hard palate he prefers the Langenbeck operation—muco-periosteal flap—from the fact that in a majority of instances it succeeds in filling the gap with osseous tissue.

In cases of double cleft of the lip and palate, with protrusion of the intermaxillary tubercle, operation should be advised at the earliest possible day, as these children are prevented from taking the breast or even the bottle. Feeding by the spoon is therefore the only method that can be used, and, on account of the difficulty in swallowing, they, as a rule, do not obtain sufficient nourishment to properly sustain the functions of life, and as a result may dwindle away and die. Early correction of the deformity in the anterior portion of the mouth is therefore imperative.

It is customary with most surgeons in operating upon these cases to cut away the protruding intermaxillary tubercle and close the lip upon the median line.

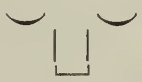
This certainly is the easier method, but it is open to serious objections: first, because this portion of the maxilla contains the incisor teeth; second, because it removes the bony column upon which the nose rests; and third, because it produces an extreme narrowing of the face in the incisive and canine regions, with more or less complete stenosis of the nostrils, a deformity which can never afterward be remedied.

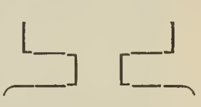
The preferable method is to replace the intermaxillary tubercle by removing an inverted V-shaped section from the vomer (Λ) and carrying the tubercle into position and retaining it there by a wire suture passed through holes drilled in the vomer anteriorly and posteriorly to the point of section and allowed to remain until union has taken place.

If the lateral surfaces of the tubercle now come in contact with the lateral halves of the maxilla, the occluding surfaces should be freshened and one or more fine silk sutures passed through the gum tissue upon either side. When the surfaces do not occlude and the separation to be overcome is not very great, forcible pressure can be made upon the malar bones by the hands of the operator until the surfaces meet, and afterward held in position by means of the Hanesby truss or rubber band, as suggested by Garretson.*

In closing the lip it is preferable to utilize the central portion if it is of sufficient width to admit the passage of sutures, rather than to cut it away, and unite the lip upon the median lines.

The *Golden Bird* operation is the one now usually practiced by the writer in these cases. It consists in removing the vermilion border on all sides, leaving the central portion with straight edges. The lateral halves of the lip are then dissected from their attachment to the bone, and pared to fit the trimmed prolabium. In order to obtain a sufficient amount of tissue to form a good lip it sometimes becomes necessary to carry an incision around the ala of the nose and into the cheek. A deep suture is passed near the border of the lip, just above the edge of the mucous membrane—it is often impossible to pass more than one—and the edges of the mucous membrane brought into nice apposition with fine interrupted silk sutures.





To relieve tension and protect the wound it is covered with a collodion dressing, and over this an adhesive strip.

The writer prefers to replace the maxillary tubercle and close the lip at the same time. Operation upon the fissured palate should be deferred till a later period. This operation he has performed several times with uniformly good results. One child was but six days old; but the operation was well borne, and he took the breast three hours afterward. The others were between two and six months old.

I will now describe a method of procedure for closing the velum palati which I do not remember to have seen suggested before, and which in my hands has given good results. This method is especially adapted to those cases where the cleft in the velum is the only oral defect.

The usual method is to freshen the edges of the velum with a bold hand, most surgeons claiming that successful union is more often obtained by this method than when less tissue is cut away. This, so far as obtaining good union is concerned, is a self-evident fact; but why sacrifice tissue when there is generally so little in the first place to operate upon? The main object is to restore function, and this can only be accomplished by restoring the velum and uvula to their proper width and length so as to insure a perfect occlusion of the naso-pharyngeal opening.

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* Garretson, "Oral Surgery."

In paring the cleft by either the bold or conservative method the parings are usually sacrificed. By the method which is now presented the parings are utilized to broaden and lengthen the velum and form a new uvula.

In the act of deglutition the velum palati is drawn up against the walls of the pharynx, the base of the uvula filling the depression upon the median line, formed by the approximation of the two sides of the pharynx, thus perfectly closing the naso-pharyngeal opening and preventing the escape of food into the nasal passages during the act of swallowing, and materially assisting in the production of articulate speech by preventing the escape of certain sounds through the nasal passages.

By the operation suggested every particle of tissue is saved and carried to that part of the velum where it is most needed to improve the shape, the width, and the length.

The method is similar to that often practiced upon single harelip —viz., a curved, pointed bistoury is inserted just above the apex of the cleft and carried downward toward the uvula of one side, about one line from the cleft at the apex, gradually increasing the distance as the bistoury approaches the uvula to about two lines from the edge of the cleft and three lines from the posterior border of the velum. This incision is repeated upon the opposite side. The apex of the paring is then carried backward and the freshened edges approximated and sutured. Three or four sutures are generally inserted, silver wires being given the preference, as less likely to induce suppuration or ulceration about the sutures. Tension is relieved when necessary by dividing the tensor palati muscle upon either side, but the procedure is by no means always indicated. The accompanying diagrams illustrate the various steps in the operation.

The after treatment consists in keeping the wound and sutures as clean as possible by swabbing and spraying the parts with the Theirsch antiseptic solution at least every two or three hours. The sutures are allowed to remain from four to ten days, according to indications.

In conclusion I desire to exhibit a pair of curved needles and a pick-up, which are especially adapted to this operation in the mouths of little children. The point to which I desire to call your particular attention is the shortness of the curve, which permits

its use in the smallest or narrowest maxillary arch, and the Jackson eye, which greatly facilitates the threading and unthreading of the needle, and thereby considerably shortens the time consumed in the operation. The needles were made for me by Truax & Co., of Chicago.

DENTAL NOMENCLATURE OF THE SURFACES OF THE TEETH, AND NOTATION OF CAVITIES.*

BY WILLIAM O. KULP, D.D.S., DAVENPORT, IA.

ANATOMISTS have drawn an imaginary line longitudinally through the body, separating it into right and left, calling it the "median line," naming all surfaces or margins directed toward this line "mesial surfaces" or margins, and the surfaces or margins directed away from this line "distal surfaces" or margins. In reference to the teeth these surfaces and margins are understood by anatomists to be those *we* call lingual and buccal surfaces and margins. So also have they established a rule (nomenclature, if you please) to call all surfaces directed toward the crown of the head "superior," while those directed toward the soles of the feet are the "inferior" surfaces or margins.

Now the teeth, when considered in their relation to the body, the cutting edges and the grinding surfaces of the lower jaw would be understood to be the superior surface, while the same surfaces in the upper jaw would be the inferior. The terms used in defining more minutely certain portions of the teeth, such as approximating lingual, approximating labial, and the proximating surfaces, can be used in forming a nomenclature of the teeth for use in operative dentistry, in which the terms of anatomists, as understood and established, need not be ignored, but taken as a basis upon which to build a structure. A system should be based upon the outlines of anatomists so far as they go in their description of the teeth, as to surfaces exposed toward the mesial line of the body, and marginal surfaces exposed toward the crown of the head or the soles of the feet. Our specialty is like a continuation or an annex to the old structure of medicine and surgery. We must therefore take the liberty of coining terms and words suitable to our specialty. The question then arises, Shall these terms be based upon the Latin and Greek? or shall they be wholly English or vernacular? Why should we borrow our terms from dead or foreign languages? We may appropriately use words with Latin or Greek derivatives, for the English is largely composed of derivatives from other languages; but to compel us to submit to the use of Latin or Greek terms in which to name the operations upon the teeth seems absurd. The terms used should be self-explanatory, not misleading or ambiguous. We have the advantage of modern education to aid us in our search for such terms. We need no terms that are mysterious to the general public. The requirement of international terms cannot have much weight, as a greater proportion of our profession all over the world have learned and can understand English. Some of us will live to see the day when all men of business and education throughout the world, as well as the great majority of commoner people, will understand the English as well as any other language. Then why should we use "old timber" any more than is absolutely essential to the structure? The nomenclature of professions are the signboards of their intelligence and training. Mysterious high-sounding words and phrases have had their day. The general public is becoming too intelligent to be courted into a reverence and awe of a profession by it.

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* Read before the Tennessee Dental Association, March, 1894.

The terms to be used in dentistry in the future, in my opinion, should be largely in the English language, and, as far as possible, should be self-explanatory, based upon the foundation of older specialties only so far as we come in contact with them. There should be a thorough weeding out of all the old, ambiguous, and incongruous terms, and new ones substituted that are in thorough harmony with the position already indicated, covering the whole ground.

The nomenclature for the surfaces of the teeth, to which I desire to call your attention, is based upon anatomical outlines and Latin and Greek derivatives Anglicized sufficiently to be self-explanatory to all who know the teeth by their present names—viz., incisors, central and lateral (right and left, upper and lower); cuspids (right and left, upper and lower); bicuspids, first and second (right and left, upper and lower); molars, first, second, and third (right and left, upper and lower).

I believe the profession the world over name them in this way, or are at least familiar with the terms. The mapping or subdividing the surfaces of the teeth is a matter of some importance to the operative dentist, and of greater to the teacher and student. To them a tooth presents five surfaces—viz., labial or buccal, lingual, two proximal, and the occluding or grinding surfaces. These surfaces are subdivided both longitudinally and transversely, so that it becomes an easy matter to definitely locate cavities by numbers, on any of the surfaces of the teeth. The transverse division of all the teeth is into thirds, beginning with the occluding or grinding surface and ending with the margin of the alveolus.

The attempt to base a system of nomenclature of the surfaces of the teeth upon the terms "mesial" and "distal" is not in anatomical harmony, therefore a self-evident failure. The central incisor is really the only tooth of all the set that these terms could be applicable to, for here we find the centro-proximal surfaces are exposed toward the mesial line, while the latero-proximal surfaces are farthest from this line. The lateral incisors, being the second teeth in the arch, do not always retain the same position, therefore the centro-proximal surfaces of lateral incisors are not always toward the mesial line; neither are the cuspo-proximal surfaces the most distant from the line, and therefore cannot properly be called the mesial and distal surfaces. The same is true with the cuspids; while in the bicuspids and molars the mesial surfaces would be the lingual, and the distal the buccal surfaces. Not in harmony as intended by the *framers* of their own system, and thus misleading. If reference were made to the mesial surface of a molar in the presence of an anatomist, he would at once infer that you meant the surface toward the median line, which would be the lingual surface; while the distal surface would be understood to be buccal.

Now let us look at the other system, that of

ANTERIOR AND POSTERIOR SURFACES.

Anterior means toward the orifice (or opening) of the mouth, while posterior means that surface farthest from the opening (or orifice). Then in the central incisor the anterior surface would be the labial, while the posterior would be the lingual or palatine. This is true also with the lateral incisors and partially true of the cuspid, while in the central the meaning is that the anterior surface is the approximating surface—*i. e.*, centro-proximal—while the latero-proximal surfaces are meant to be the posterior. When we get back to the bicuspids and molars, this system is nearly correct; but because of the inaccuracy of the system with the front teeth it cannot be accepted as perfect or faultless. There is still a "looking for something better."

We want such a system of nomenclature that every term used will explain itself, so that as soon as we learn the names of the teeth we can understand the terms used in describing the surfaces of any tooth.

In regard to the use of figures for the location of cavities a system is presented that, with the mapping of the surfaces of the teeth, I imagine any one familiar with the teeth will have very little difficulty in mastering, because the boundary lines of cavities are very much simplified.

The surfaces of all the teeth are subdivided both longitudinally and transversely, so that it becomes an easy matter to definitely locate cavities by numbers. The teeth are divided transversely into thirds, beginning with the occluding or grinding surface and ending with the margin of the alveolus, named as follows:

1. Occluding or grinding third.
2. Middle third.
3. Cervical third.

Longitudinally, the surfaces are divided into:

1st. Labial or buccal surface.
2d. Marginal surface.
3d. Proximal surface.
4th. Lingual surface.
5th. Occluding or grinding surface.

With these outlines we begin with the central incisors and thus go through the entire set, describing each tooth minutely, the name and terms applying to each side of the median line (right and left), and upper and lower teeth.

Central Incisor.

1. Occluding third. 2. Middle third. 3. Cervical third.

1st. Labial surface.
2d. Centro-labial margin.
3d. Centro-proximal surface.
4th. Centro-lingual margin.
5th. Lingual surface.
6th. Latero-lingual margin.
7th. Latero-proximal surface.
8th. Latero-labial margin.
9th. Occluding surface.

Lateral Incisor.

1. Occluding third. 2. Middle third. 3. Cervical third.

1st. Labial surface.
2d. Centro-labial margin.
3d. Centro-proximal surface.
4th. Centro-lingual margin.
5th. Lingual surface.
6th. Cuspo-lingual margin.
7th. Cuspo-proximal surface.
8th. Cuspo-labial margin.
9th. Occluding surface.

Cuspid.

1. Occluding third. 2. Middle third. 3. Cervical third.

1st. Labial surface.
2d. Latero-labial margin.
3d. Latero-proximal surface.
4th. Latero-lingual margin.
5th. Lingual surface.
6th. Bicuspo-lingual margin.
7th. Bicuspo-proximal surface.
8th. Bicuspo-labial margin.
9th. Occluding surface.

First Bicuspid.

The buccal muscles covering these teeth, and the occluding surfaces being differently shaped, we cannot use the same terms in our description of them and preserve the text (self-explanatory), so we use the term buccal for labial, and grinding for occluding.

1. Grinding third. 2. Middle third. 3. Cervical third.

1st. Buccal surface.
2d. Cuspo-buccal margin.
3d. Cuspo-proximal surface.
4th. Cuspo-lingual margin.
5th. Lingual surface.
6th. Bicuspo-lingual margin.
7th. Bicuspo-proximal surface.
8th. Bicuspo-buccal margin.
9th. Grinding surface.

Subdivision of Grinding Surface.

1. (*a*) Lingual cusp. 2. (*b*) Buccal cusp. 3. (*c*) Bicuspo fissure.

Second Bicuspid.

1. Grinding third. 2. Middle third. 3. Cervical third.

1st. Buccal surface.
2d. Bicuspo-buccal margin.
3d. Bicuspo-proximal surface.
4th. Bicuspo-lingual margin.
5th. Lingual surface.
6th. Bicuspo-lingual margin.
7th. Bicuspo-proximal surface.
8th. Molo-buccal margin.
9th. Grinding surface.

Subdivision of Grinding Surface.

1. (*a*) Lingual cusp. 2. (*b*) Buccal cusp. 3. (*c*) Bicuspo fissure.

First Upper Molar.

1. Grinding third. 2. Middle third. 3. Cervical third.

1st. Buccal surface.
2d. Bicuspo-buccal margin.
3d. Bicuspo-proximal surface.
4th. Bicuspo-lingual margin.
5th. Lingual surface.
6th. Molo-lingual margin.
7th. Molo-proximal surface.
8th. Molo-buccal margin.
9th. Grinding surface.

Subdivision of Grinding Surface.

No. 1. Anterior buccal cusp.
No. 2. Posterior buccal cusp.
No. 3. Lingual cusp or prominence.
No. 4. Anterior or central fissure.
No. 4. (*a*) Centro-anterior fissure.
No. 4. (*b*) Centro-buccal fissure.
No. 4. (*c*) Centro-lingual fissure.
No. 5. Posterior or lingual cross fissure.
No. 5. (Comp.) All fissures compounded.

Second Upper Molar.

1. Grinding third. 2. Middle third. 3. Cervical third.

1st. Buccal surface.
2d. Molo-buccal margin.
3d. Molo-proximal surface.
4th. Molo-lingual margin.
5th. Lingual surface.
6th. Third molo-lingual margin.
7th. Third molo-proximal surface.
8th. Third molo-buccal margin.
9th. Grinding surface.

Subdivision of Grinding Surface.

1. Anterior buccal cusp.
2. Posterior buccal cusp.
3. Lingual cusp or prominence.
4. Central fissure.
4. (*a*) Centro-anterior fissure.
4. (*b*) Centro-buccal fissure.
4. (*c*) Centro-lingual fissure.
5. Posterior lingual cross fissure.
5. (Comp.) All fissures compounded.

Third Upper Molar.

1. Grinding third. 2. Middle third. 3. Cervical third.

1st. Buccal surface.
2d. Molo-buccal margin.
3d. Molo-proximal surface.
4th. Molo-lingual margin.
5th. Lingual surface.
6th. Posterior surface.
7th. Grinding surface.

Subdivision of Grinding Surface.

1. Anterior buccal cusp.
2. Posterior buccal cusp.
3. Lingual prominence.
4. Central fissure.

The lower molars, differing from the upper in their grinding surfaces, need a separate subdivision of this surface.

1. Anterior buccal cusp.
2. Posterior buccal cusp.
3. Anterior lingual cusp.
4. Posterior lingual cusp.
5. Central fissure.
5. (*a*) Centro-anterior fissure.
5. (*b*) Centro-buccal fissure.
5. (*c*) Centro-lingual fissure.
5. (*d*) Centro-posterior fissure.
5. (Comp.) All fissures compounded.
Buccal pit fissure.

The second and third lower molar surfaces have the same subdivisions of the grinding surfaces.

Cavity Notation.

As all nations are familiar with, and most of them use, the digits from one to ten to express numbers, a system of cavity notation based upon these figures must at once be recognized as international. The system that I have used for some years in my teaching is based upon the numbers from one to ten, making ten distinct and simple cavities in each tooth, each number always occupying the same division in each tooth; so that if the tooth is named and the number referred to, the location of the cavity is at once recognized. Each number or figure has its compounds with other figures, but there is never any necessity to increase the number above ten. On the labial, lingual, and buccal surfaces we have but one number. If a cavity occupies more than one division of the tooth, it is so designated—as for instance, the No. 1 labial surface of the central incisor may involve the middle and cervical divisions of the tooth. It would then be expressed No. 1 Comp. m.c., if the larger portion of the filling was in the middle third. If the larger part was in the cervical third, it would be expressed by using c.m. instead of m.c., and so in the same manner on the lingual and buccal surfaces, while on the proximal surfaces each cavity has its specific number. As we find the greater proportion of the cavities we are called upon to treat located upon these surfaces, their surface numbers are compounded instead of the divisions of the teeth.

Notation and location of cavities by figures upon the surfaces of central incisors (upper and lower, right and left):

Cavity No. 1. Labial surface.
Cavity No. 2. Cervical third, centro-proximal surface.
Cavity No. 3. Middle third, centro-proximal surface.
Cavity No. 4. Occluding third, centro-proximal surface.
Cavity No. 5. Occluding or marginal surface.
Cavity No. 6. Occluding third, latero-proximal surface.
Cavity No. 7. Middle third, latero-proximal surface.
Cavity No. 8. Cervical third, latero-proximal surface.
Cavity No. 9. Lingual surface.
Cavity No. 10. Occluding and middle thirds (Nos. 3, 4, 5, 6, and 7).

Any of these numbers may be compounded with others. When so, all numbers involved in a given cavity should be mentioned, beginning with the number where the largest part of the filling is located—as for instance, a large gold filling, occupying the entire centro-proximal surface of a central incisor, the largest part of the contour being in the occluding third, or No. 4, it would then be expressed as Nos. 4, 3, and 2 Comp., upper central incisor. The same rule governs in all cases on all teeth.

Cavity notation of lateral incisors (upper and lower, right and left):

Cavity No. 1. Labial surface.
Cavity No. 2. Cervical third, centro-proximal surface.
Cavity No. 3. Middle third, centro-proximal surface.
Cavity No. 4. Occluding third, centro-proximal surface.
Cavity No. 5. Occluding or marginal surface.
Cavity No. 6. Occluding third, cuspo-proximal surface.
Cavity No. 7. Middle third, cuspo-proximal surface.
Cavity No. 8. Cervical third, cuspo-proximal surface.
Cavity No. 9. Lingual surface.
Cavity No. 10. Occluding and middle thirds compounded.

Notation of cavities on cuspids (upper and lower, right and left):

Cavity No. 1. Labial surface.
Cavity No. 2. Cervical third, latero-proximal surface.
Cavity No. 3. Middle third, latero-proximal surface.
Cavity No. 4. Occluding third, latero-proximal surface.
Cavity No. 5. Occluding surface.
Cavity No. 6. Occluding third, bicuspo-proximal surface.
Cavity No. 7. Middle third, bicuspo-proximal surface.
Cavity No. 8. Cervical third, bicuspo-proximal surface.
Cavity No. 9. Lingual surface.
Cavity No. 10. Occluding and middle thirds compounded.

Notation of cavities in first bicuspids (upper and lower, right and left):

Cavity No. 1. Buccal surface.
Cavity No. 2. Cervical third, cuspo-proximal surface.
Cavity No. 3. Middle third, cuspo-proximal surface.
Cavity No. 4. Grinding third, bicuspo-proximal surface.
Cavity No. 5. Bicuspo fissure.
Cavity No. 6. Grinding third, bicuspo-proximal surface.
Cavity No. 7. Middle third, bicuspo-proximal surface.
Cavity No. 8. Cervical third, bicuspo-proximal surface.
Cavity No. 9. Lingual surface.
Cavity No. 10. Entire grinding third involved.

Notation of cavities in second bicuspids (upper and lower, right and left):

Cavity No. 1. Buccal surface.
Cavity No. 2. Cervical third, bicuspo-proximal surface.
Cavity No. 3. Middle third, bicuspo-proximal surface.
Cavity No. 4. Grinding third, bicuspo-proximal surface.
Cavity No. 5. Bicuspo fissure.
Cavity No. 6. Grinding third, molo-proximal surface.
Cavity No. 7. Middle third, molo-proximal surface.
Cavity No. 8. Cervical third, molo-proximal surface.
Cavity No. 9. Lingual surface.
Cavity No. 10. Entire grinding third.

Notation of cavities of the first upper molars:

Cavity No. 1. Buccal surface.
Cavity No. 2. Cervical third, bicuspo-proximal surface.
Cavity No. 3. Middle third, bicuspo-proximal surface.
Cavity No. 4. Grinding third, bicuspo-proximal surface.
Cavity No. 5. Centro fissure grinding surface.
Cavity No. 5. (*a*) Centro-anterior fissure.
Cavity No. 5. (*b*) Centro-buccal fissure.
Cavity No. 5. (*c*) Centro-lingual fissure.
Cavity No. 5. (*d*) Posterior lingual cross fissure.
Cavity No. 6. Grinding third, molo-proximal surface.
Cavity No. 7. Middle third, molo-proximal surface.
Cavity No. 8. Cervical third, molo-proximal surface.
Cavity No. 9. Lingual surface.
Cavity No. 10. Compounded fissures, entire grinding third involved.

Notation of cavities of the second upper molars:

Cavity No. 1. Buccal surface.
Cavity No. 2. Cervical third, molo-proximal surface.
Cavity No. 3. Middle third, molo-proximal surface.
Cavity No. 4. Grinding third, molo-proximal surface.
Cavity No. 5. Centro-fissure grinding surface.
Cavity No. 5. (*a*) Centro-anterior fissure.
Cavity No. 5. (*b*) Centro-buccal fissure.
Cavity No. 5. (*c*) Centro-lingual fissure.
Cavity No. 5. (*d*) Posterior or lingual cross fissure.
Cavity No. 6. Grinding third, third molo-proximal surface.
Cavity No. 7. Middle third, third molo-proximal surface.
Cavity No. 8. Cervical third, third molo-proximal surface.

Cavity No. 9. Lingual surface.

Cavity No. 10. Entire grinding surface.

Notation of cavities of the third upper molars:

Cavity No. 1. Buccal surface.

Cavity No. 2. Cervical third, molo-proximal surface.

Cavity No. 3. Middle third, molo-proximal surface.

Cavity No. 4. Grinding third, molo-proximal surface.

Cavity No. 5. Centro-fissure grinding surface.

Cavity No. 6. Grinding third, posterior surface.

Cavity No. 7. Middle third, posterior surface.

Cavity No. 8. Cervical third, posterior surface.

Cavity No. 9. Lingual surface.

Cavity No. 10. Entire grinding surface.

Notation of cavities of the first lower molars:

Cavity No. 1. Buccal surface or pit fissure.

Cavity No. 2. Cervical third, bicuspo-proximal surface.

Cavity No. 3. Middle third, bicuspo-proximal surface.

Cavity No. 4. Grinding third, bicuspo-proximal surface.

Cavity No. 5. Centro-fissure grinding surface.

Cavity No. 5. (*a*) Centro-anterior fissure grinding surface.

Cavity No. 5. (*b*) Centro-buccal fissure grinding surface.

Cavity No. 5. (*p*) Centro-posterior fissure.

Cavity No. 5. (*l*) Centro-lingual fissure.

Cavity No. 5. (Comp.) Compound, all fissures on grinding surface involved.

Cavity No. 6. Grinding third, molo-proximal surface.

Cavity No. 7. Middle third, molo-proximal surface.

Cavity No. 8. Cervical third, molo-proximal surface.

Cavity No. 9. Lingual surface.

Cavity No. 10. Grinding third, compounding of entire grinding surface.

Notation of cavities of the second lower molars:

Cavity No. 1. Buccal surface or pit fissure.

Cavity No. 2. Cervical third, molo-proximal surface.

Cavity No. 3. Middle third, molo-proximal surface.

Cavity No. 4. Grinding third, molo-proximal surface.

Cavity No. 5. Centro-fissure grinding surface.

Cavity No. 5. (*a*) Centro-anterior fissure, grinding surface.

Cavity No. 5. (*b*) Centro-buccal fissure, grinding surface.

Cavity No. 5. (*p*) Centro-posterior fissure, grinding surface.

Cavity No. 5. (*l*) Centro-lingual fissure, grinding surface.

Cavity No. 5. (Comp.) All fissures compounded.
Cavity No. 6. Grinding third, molo-proximal surface.
Cavity No. 7. Middle third, molo-proximal surface.
Cavity No. 8. Cervical third, molo-proximal surface.
Cavity No. 9. Lingual surface.
Cavity No. 10. Grinding third, compounding of entire grinding surface.

Notation of cavities of the third lower molars:

Cavity No. 1. Buccal surface or pit fissure.
Cavity No. 2. Cervical third, molo-proximal surface.
Cavity No. 3. Middle third, molo-proximal surface.
Cavity No. 4. Grinding third, molo-proximal surface.
Cavity No. 5. Centro-fissure, grinding surface.
Cavity No. 5. (*a*) Centro-anterior fissure, grinding surface.
Cavity No. 5. (*b*) Centro-buccal fissure, grinding surface.
Cavity No. 5. (*p*) Centro-posterior fissure, grinding surface.
Cavity No. 5. (*l*) Centro-lingual fissure, grinding surface.
Cavity No. 5. (Comp.) Compounding all fissures, grinding surface.
Cavity No. 6. Grinding third, posterior surface.
Cavity No. 7. Middle third, posterior surface.
Cavity No. 8. Cervical third, posterior surface.
Cavity No. 9. Lingual surface.
Cavity No. 10. Entire grinding surface.

As we have thus far named and described the surfaces of the teeth and noted the position of cavities, the use of the French system of denoting the depth of decay by degrees makes the whole subject as relating to the work and teaching of operative dentistry explicit. The French system mentioned is as follows:

1st Degree. When it is superficial.
2d Degree. When the decay extends into the dentine.
3d Degree. When the decay encroaches upon the pulp.
4th Degree. When the pulp is exposed.

Keeping in mind the figures as locating different cavities, the degrees of decay can be correctly mentioned, and at the same time be quickly understood.

THE MISSING TEETH OF MAN.*

BY ALTON H. THOMPSON, D.D.S., TOPEKA, KAN.

If I may be indulged in a personal reminiscence as an introduction to this paper, I would say that the presentation of this subject in this city is fraught with a peculiar interest, owing to the fact that the theme of the paper was first called to my attention by an address given in the city of Nashville by Prof. O. G. Marsh, before the meeting of the American Association for the Advancement of Science, in 1877, upon the subject of "The Introduction and Succession of Vertebrate Life in America." In the course of that most delightful and instructive paper he says: "In the lower Eocene strata of New Mexico we find a few representatives of the lowest known primates, and among them the genera *Lemuravus* and *Limnotherium*, each the type of a distinct family. These are very abundant in the middle Eocene of the West. *Lemuravus* appears to have been most nearly allied to the lemurs, and is the most generalized form of primates yet discovered. It had forty-four teeth, forming a continuous series above and below. *Limnotherium* is also related to the lemurs, but shows some affinities with the South American marmosets."

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*Read before the Tennessee Dental Association, March, 1894.

As forty-four is the archetypal number of mammalian teeth, and these lowest forms of the *Quadrumana* having the full number, besides being very much generalized in other respects, the fact of these low forms (which were the probable ancestors of all the *Quadrumana*, and of man) being found on American soil, was one of peculiar interest. These forms were much generalized in all their anatomy, and exhibit relationship with many later, higher, and more specialized families. The teeth, for instance, were a continuous series, graded gradually from incisors to canines, from canines to premolars, and from premolars to molars. In the higher primates some of these teeth have been lost, so that the continuity of the series is broken. In man, for instance, there are abrupt changes from one series to another.

The article of Prof. Marsh's suggested and subsequent studies aided the solution of the problem as to the probable cause and origin of the extra teeth that sometimes appear in man, and are known in the text-books as "supernumeraries." They are generally considered "freaks," like extra fingers or toes in polydactylism. To the evolutionist, however, these extra teeth are invested with peculiar interest. They are conspicuous examples of the workings of the wonderful law of *atavism*—*i. e.*, the reappearance of lost organs or parts that have in the course of development been aborted. The plain fact is that man has, in the process of his evolution from the lowest typal mammal, lost twelve teeth—*i. e.*, the difference between thirty-two and forty-four, the typical mammalian number. Supernumerary teeth are the representatives of those teeth that have been lost, are the reappearance of the lost teeth. It seems that nature, in response to some undiscovered impulse, makes a spasmodic effort, a spurt of hereditary energy, and reproduces some of the other twelve original dental germs. Fourth molars, third bicuspids, and third incisors, which were the teeth that have disappeared from the species, are the ones that are reproduced as extras or supernumeraries. They are, of course, usually deformed and rudimentary, as if the effort to produce teeth of full form was too much for the failing powers. Occasionally a fully formed and typical tooth is produced, but this is rare. They are usually quite rudimentary. Man has lost one incisor, one premolar (or bicuspid), and one molar from each side of each jaw, which are the teeth reproduced and called supernumeraries.

As Mr. Osborn says, in the *American Naturalist* (1892, p. 467), that "upon the descent theory the reduction of the teeth in the progenitors of men, began as far back as the Eocene period, for not later than that remote age do we find the complement of three incisors and four premolars on each side of each jaw. Now there are but two remaining of each in man." The fourth premolar to which Mr. Osborn refers is, however, a true molar, and belongs to that series. He continues: "Not infrequently the missing incisor occurs by reversion. An embryonic third incisor has been found in the jaw also. In 1868 Sedgwick reported a case of six upper and six lower incisors in each jaw, appearing in both first and second dentures. This anomaly was inherited from a grandparent, a striking evidence of hereditary reversal tendency. Wilde has shown that the last incisor reappears more frequently in the upper than in the lower jaw, coinciding with the fact that the lower teeth were the first to disappear in the race. He thinks that the lost incisor tooth was the one next to the canine. Baume believes that the missing tooth was the median one, but this is not likely."

From our clinical experience we have observed that the supernumerary incisor, wherever it appears, whether in the arch or inside or outside of it, is rarely of true incisor form, but nearly always of caniniform shape, showing that it is related to the canine and belonged next to it in the series—that is, when the teeth are all in place and were graded from one to another in regular continuity of form. The missing incisor (the third) when in place in the primitive mammalian dentition of forty-four teeth, came next to the lateral and graded from it to the canine. It therefore must have been more of a canine than a lateral, and this is borne out by the form it usually assumes when it reappears in man. But the resemblance would be most interesting to work out from an assortment of supernumerary incisors, compared with the third incisor of the typical mammal in the fossil skull. In man it very rarely appears as a true incisor, but more often as a partial incisor or a caniniform crown or a mere peg or a nondescript rudiment.

As is well known, the present lateral, the second incisor, is very erratic and follows the third molar in the frequency of its irregularity, both as to form and number. It is quite erratic in form, often being a mere peg, and is of various degrees of perfection. It is often absent from the denture entirely, and one or both may be missing for several generations in a family. Like the wisdom tooth, it seems to be on the road to total suppression. The lateral is itself graded in form, for, as is well known, it is half incisor and half canine—*i. e.*, the mesial half of the crown is of incisor form, like the central, and the distal half is more rounded off like the canine. The disto-occlusive angle is rounded and the distal face presents an eminence like the canine. Thus it is graded toward the canine form, and the primitive third incisor was probably still more of that shape, as its representatives by reversion would indicate.

This grading of form is not observable as we pass from the canine to the bicuspids in man; but we must remember that the canine often presents a cingulum on the lingual face that inclines it toward the bicuspid form in some lower mammals, as the moles, and that the first premolar, or bicuspid, is then more caniniform, the inner tubercle being much reduced. This inner tubercle is very variable and erratic as to its many positions. It appears as far front as the centrals, and is often present on the lingual face of the laterals of man. The lingual tubercle is very constant on the first bicuspids of man and is as well developed as the buccal, but in some lower forms, as the lemurs, it is quite deficient. It attains its highest development only in the higher *Quadrumana* and in man. Considering these stages of development, the grading from the canine to the bicuspid forms was more gradual in the earlier species than in the later, where the individual teeth have taken on special development.

The third premolar, or bicuspid, sometimes reappears in man, but is usually a well-formed tooth when it does appear. It seems to have been the middle one of the three. Baume (op. cit.) believes that he has "discovered eleven cases of rudimentary reversion of these lost premolars not cutting the gums. These rudiments were found between the first and second normal premolars. Not infrequently both these missing teeth occur by reversion." In our clinical observation we usually, if not always, find the upper third bicuspid crowded into the roof of the mouth from the interspace between the other two. We should, from analogy, rather expect it to be near the canine and be more of a caniniform shape, like the first lower bicuspid. But in earlier forms the present first bicuspid was more caniniform, as the inner lingual tubercle was considerably reduced and the canine had its lingual cingulum largely developed, so that the transition was more gradual. In man special development of both teeth has separated the canine and first bicuspid widely as to form. The third upper bicuspid is quite rare, more so than the third lower bicuspid, but both are most interesting cases of reversion to the primitive number of three premolars.

In the lower jaw it is interesting to note that the first bicuspid is a tooth that shows the gradual transition very well, as it is caniniform in outline, and the lingual cusp is a mere cingulum, and not a cusp at all. The crown is formed like a canine with a cingulum raised on its inner face, and belongs naturally where it is now found: next to the canine. The supernumerary premolar below usually appears in the interspace between the first and second bicuspids, pointing lingually on account of being crowded in that direction, where it is often the cause of irritation of the tongue and has to be removed. It is usually of graded form, but more frequently is of a well-formed second bicuspid type, with the characteristic three cusps of that tooth. Its form shows that it belongs in that position. In the specimen exhibited this is well illustrated. Rudimentary forms of this tooth are very rare, but probably do occur. This cannot be determined until a number of casts and extracted specimens have been collected and classified.

The bicuspids grade into the molar series by the succession of the tricuspid molar, which is the primitive bunodont type as found in the earliest mammals and in the lemuroid ancestors of the primates, as Prof. Cope has pointed out. The tricuspid molar is repeated in some of the races of mankind, especially the Latin branches. The change from the bicuspid to the primitive tricuspid molar is gradual, but with the addition of the fourth tubercle the transition, as in man, is very abrupt. It looks as if there must have been another intermediate tooth between these two series in the earlier species, but such was probably not the case.

The fourth molar is the missing member of the molar series, and sometimes reappears in man, but usually as a mere peg upon the buccal side of the second and third molars. It often requires removal on account of the annoyance it causes. It is sometimes fused to the third molar. It rarely or never appears posterior to the third molar, except in the large-toothed races, the "macrodonts," as the negroes, Australians, etc. As Mr. Osborn says (op. cit.): "In the macrodont races (Australian, negro, etc.) the fourth molar sometimes occurs. Mr. Mummery reports nine cases in three hundred and twenty-eight West Africans. It has been found in the Tasmanian, New Caledonian, etc." But these are also Australoid races. Dr. John Ryder says (Proc. Acad. Sci., Phila.): "The skull of an Australian in the Morton collection of the academy has thirty-five teeth. Thirty-four of these are normally arranged, there being a supernumerary molar on each side above. If these had been repeated in the mandible the dentition would have been as low as that of the South American monkeys. As it is, it is lower than that of the gorilla and chimpanzee in this respect (which have but thirty-two teeth, like civilized man), and shows the tendency of even the primates to revert toward the primitive formula of forty-four teeth prevalent in Eocene times."

The fourth molar of complete form is sometimes found in the negro of the United States, and is well arranged in the arch. In the white races, however, it is nearly always a mere rudimentary peg, rarely or never being of typal form and well arranged in the jaw. A case is reported, however, in which there were four extra molars, one on each side of each jaw, in a white woman. (Cosmos, Vol. XIV., p. 227.) The reduction of the jaws in the higher races has contributed to its obliteration, and this contraction is now going on and is crowding out the third molar. The occasional reversion of the fourth molar is interesting, and cases where it presents in full form in the arch are of especial interest to the evolutionist as exhibiting a return to a condition that takes us back even of the higher apes, which have the same dental formula as man.

The whole subject of supernumerary teeth is of great interest when studied from the evolution standpoint. The writer hopes to carry his investigations further by the collection, arrangement, and comparison of casts and supernumerary teeth. To that end he asks all who may have opportunity to obtain and send him casts of supernumerary teeth in the jaws, and the teeth themselves when possible, together with such items of family history as bear on the frequency of their occurrence as may be obtainable. For such assistance proper acknowledgment will be made.

When classified types of supernumerary teeth can be made out, it will be most instructive to compare these types with the originals of those teeth as found in the fossil skulls of earlier mammalian forms, and especially of our lemuroid ancestors that have been preserved.

FRAUDS.*

BY J. P. M'DONALD, D.D.S.

Fraud is a term which the courts have often refused to define for the reason that to define it would be to point out a way to perpetrate it and escape the legal consequences. It has, however, been defined to be "any cunning, deception, or artifice, used to circumvent, cheat, or deceive another."

It may be divided into two general classes: actual or moral fraud, and constructive or legal fraud.

Actual fraud consists in any act of omission or commission contrary to legal or moral duty, trust, or confidence, justly reposed, and which operates to the injury of another. The former implies moral turpitude; the latter may be consistent with innocence.

While I have borrowed the foregoing definitions from the law books of a friend, I do not intend to confine my attention to such phases of fraud only as come under view in the judicial tribunals of the land where civil rights are litigated and determined; nor do I propose to discuss at length that class of moral frauds by which so many of the strong financial institutions of this city and of the country generally have been wrecked and so many good citizens beggared and ruined.

In the realm of morals there are many wrongs which courts do not undertake to redress, though grievous injury may follow their commission.

We understand that even the court of equity, often styled the court of conscience, does not pretend to enforce all the principles of sound morals, or to take control of many legally imperfect but strong obligations resting upon refined moral duty. I shall, therefore consider my subject from the broader standpoint of duty in the domain of moral law, as well as duty in the technical or narrower meaning of fraud as interpreted by the courts. In other words, I shall consider fraud as a synonym of deceit, imposition, trick, cheat, artifice, humbug.

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*Read before the Tennessee Dental Association.

Acts and conduct must be weighed as to legal and moral responsibility, "in nicer or yet nicer scale," according to the importance and delicacy of the subject-matter occasioning them.

No principle is more deeply implanted in our system of constitutional rights and liberties than the protection of the person, these God-given bodies, these temples of the soul. These sacred safeguards, designed to prevent and punish any injury to our rights of person, are meant, of course, to protect every essential to the health and welfare of the body.

Is it not in law a fraud, in morals a crime, for any man to hold himself out to the world as possessed of the requisite skill to minister to the needs of the body, to cure its ailments, to heal its diseases, to save and restore decayed teeth, when in fact he has neglected to prepare himself by study and training? If he be a medical doctor, he may be sued for malpractice, and punished by a heavy verdict for damages, if indeed he is not execution-proof.

Is not the professional dentist legally liable for malpractice? He may think he knows how to treat his patients; but if he has not wrought with travail and prepared himself thoroughly, it is a mere guess of vanity, and he is guilty of fraud in the sense that he invites the public to believe that he has duly prepared and fitted himself by the only known means of accomplishing it, when in fact he has not. This is a deception and fraud. It is at least a suppression of the truth, and possesses a degree of legal and moral turpitude equivalent to an expression of an untruth.

We may now mention some of the things that occur in the practice of dentistry, and leave the legal minds among you to arrange and classify the cases stated under the head of constructive or of actual fraud as you may.

We assemble in annual meeting to promote the cause of skilled dentistry, and by every honorable means to assist and enlighten one another. Members are sometimes heard to say they derive no practical benefit from attendance on these meetings. If this be true, it is attributable to the character of our methods, or rather our lack of methods, in conducting our discussions; and it perhaps in a large measure results from the inattention of the complaining members. When a given subject is under discussion, we should exclude all others, and concentrate our attention upon that subject and confine our remarks to it, so that each listener may get a clear conception of all the uttered wisdom of the body upon each and every subject debated. He will then have little cause to feel that he has been defrauded of his time and his money.

As you pass along the busy thoroughfares of your modern city you can scarcely raise your line of vision to the signboards that you do not read,

"TEETH EXTRACTED WITHOUT PAIN,"

usually in red and gilt-shaded letters, mounted to arrest attention. Too often those who enter these glaringly advertised portals depart feeling that, if not actually victimized, they have at least been deceived, and go home with maledictions in their sore mouths for the operator who did *not extract* without pain.

In this age of universal advertising and of manifold newspapers and periodicals the above frequently figures conspicuously as a headline, accompanied with promises of low rates of charges, full sets of teeth at greatly reduced prices, and other cunning propositions and guarantees. If a few of the scenes which transpire in these loudly puffed and self-praised "Dental Parlors" could be accurately portrayed on canvas and shown to the public as they really are, they would be shunned as the frauds which most of them are. The fact is, that in many of them teeth *are* extracted with a VENGEANCE! It is the profession and the business of these advertisers to "extract teeth," and they lose no opportunity for doing it. To render their advertisements more delusive and seductive, they often claim the *exclusive* right to use some nostrum —of strange name, and a stranger composition so far as the advertiser knows—which is represented to be harmless and certain death to pain; and it is only after it is *too late* that the average patient who submits himself to the hands of these boastful charlatans learns that he has been made their dupe, and has suffered irreparable injuries as a consequence.

One of the greatest wrongs and injuries consists in the indiscriminate and ignorant destruction of valuable teeth which only require slight repair and attention at the hands of a skilled and conscientious dentist to preserve them and continue their usefulness. To conceal or suppress the fact known to every scientific dentist, that poor, worn, and decayed natural teeth, when skillfully repaired, are incomparably superior to the best and most perfect artificial substitute is not the least of the frauds practiced by these fellows who extract teeth for revenue only.

While it is perhaps true that we cannot take the time and the space to advert to all the claptrap and fraudulent methods resorted to by these people who style themselves dentists, we must say that there are *too many* of us who have seemed indifferent to those practices which must inevitably degrade our profession and bring it into disrepute. We believe that it is the imperative duty of every one of us who has any real pride in his profession, and any sincere ambition for its material advancement and betterment, to take such a stand and adopt such measures as shall be best calculated to purge it of *all impostors* and their fraudulent methods. One of the most efficient means of effecting this result lies in a higher standard of ethics and practice in our profession, assisted by a continuation of the faithful work of our Board of Dental Examiners.

We must with courage frown them down and show to the world that painstaking labor, close study, high resolve, and laudable ambition have their just rewards in dentistry as in other professions requiring clear brains, clean hearts, and skilled hands.

Let us unite more closely for the purpose of suppressing all fraudulent methods and dishonest practices, to the end that we may better serve humanity and elevate a noble profession to a higher plane of usefulness.

DEAD TEETH.*

BY FRANK H. SMITH, WATER VALLEY, MISS.

Mr. President and Gentlemen : Having been invited by your committee to read a paper before this Association upon some subject of my own selection pertaining to dentistry, and being young in years, also necessarily young in experience, I felt at first somewhat of a hesitancy in accepting; but being ever prompted by an ambitious desire to augment my limited store of dental knowledge, I accepted, feeling at the time perhaps it was an act of encouragement toward the younger members of the profession on the part of your committee that prompted the issuance of the invitation, and I hope my efforts will be criticised with clemency.

This is my first attempt to make an exhibit of my undiscovered talents, and I hope, if nothing more, that it may be the means of stimulating other young men who may be better capacitated than myself to do this work.

I have chosen a subject that is familiar to all and at variance with many, and one in which I have and will always feel a great interest. It is not my intention, however, to bring up any new issues, but merely a side line to what has already been said and written upon the subject of so-called "dead teeth." While there is no subject pertaining to the dental science that has been more thoroughly discussed than mine to-day, still we seem to be in our infancy as regards it; and no matter how simple the source, or how small the information gained, it is appreciated by the ambitious man.

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*Read before the Tennessee Dental Association, March, 1894.

Dead teeth! Who is to group them under the proper head, classify, treat, and save? Had we but one cause of death, the treatment might be simplified, but the complications, from individual differences, constitutional and otherwise, gives to the careful student a wider and more varied range for his knowledge and skill in saving that, which in the earlier history of dentistry were sacrificed for the want of knowledge on the part of the earlier pioneers in our wonderful field of science.

The treatment in the past, from personal experience, of those ever troublesome members have been confined to but two or three years of my professional practice and care. In that short time since I bid farewell to my *Alma Mater* I have found plenty of time to select from the experience of others food for thought and application.

A dead tooth in my earlier experience has passed through my untutored nerves like an electric shock until I found that a large per cent. of the practice demanded their treatment. A few of the many and diversified medications suggested by the best of our profession in my hands met with varied success. A repetition of the various causes of dead teeth so familiar to all is useless in this short paper, and I will confine my remarks to my experience.

Within the past few months I have had under my professional care for treatment thirty-eight teeth with dead pulse, of which number, in almost as many different patients, I have yet to hear of a single failure. My method throughout each treatment was simplicity, and my unusual success in saving these diseased members I attribute greatly to the lately introduced method of Dr. Blair, of Louisville. The use of his vaporized iodoform, to my mind precludes a possibility of a failure in anything worth saving. While I may vary slightly from him in its general use, the result with which I have met encourages me greatly in its use. It is seldom, except in very mild cases, I make application of vapor at first sitting; in more aggravated cases I cleanse the canal as thoroughly as possible with burrs, etc., after which I pump into it carbolic acid in various degrees of strength and combination, letting a pledget of cotton, saturated with the acid in full strength, remain in the tooth about twenty-four hours, after which I pass a small instrument through the canal and foramen, in order that I may be sure that I have a thorough opening, and then dose well with iodoform vapor, being careful not to introduce it too hot. In more aggravated cases I generally make from two to three applications of the vapor about twenty-four hours apart, each time only occupying a few moments, as I never put on rubber dam to make application. When I feel satisfied that the inflammation is entirely gone, I proceed to fill with gutta-percha points by first heating the canal with a hot air syringe, by which means the points can be thoroughly adapted to the walls of the canal. And right here, by way of parenthesis, I will say that I never pass gutta-percha through a blaze, which not only renders it difficult to manage, but unfit for use. I always apply heat with a syringe, after which I fill with whatever material my patient desires, feeling sure of no serious after results. The action of the vapor seems to reach remote points where it has been uncertain under other treatment. Why this is so, I leave to the gentlemen present of greater experience. Neither do I regard the use of this wonderful discovery to be confined strictly in our profession to dead teeth, as from the experience of the gentleman who first taught me the devious meanderings of this profession, Dr. McHenry, of Grenada, has recently had wonderful success with it in the treatment of an obstinate case of antral disease. Having absorbed almost every other remedy recommended with poor success, one application of the iodoform vapor accomplished the desired effect, and so it is to my mind only in its infancy.

Now, gentlemen, if this crude paper should be the means of stimulating others in the search of advanced ideas, I feel that my efforts have not been in vain.

REPORT OF COMMITTEE TO CONSIDER THE PRESIDENT'S ADDRESS.

Gentlemen of the Tennessee State Dental Association: Your committee to consider the President's address begs to report that although the time was very brief—in fact, too brief—in which to do justice to that excellent address, it has done the best it could. The address is replete with boldly asserted and, upon the whole, thoughtful points for discussion.

The first with reference to the intended insult put upon the World's Columbian Dental Congress by the profession of England. The insult may have been intended as much as it seemed and may have emanated from a respectable professional source, which is doubtful, but your committee thinks, in view of the time that has elapsed since the insult was offered, and in view of the fact that we are not confronted by the British dentists themselves, we ought to "consider the source," as the fellow said when the long-eared ancestor of the mule kicked him.

Second, the dental law comes under discussion. Your committee is fully prepared to agree with what is said in the main, but thinks it prudent to wait till the law is a little older to make any attempt at change. It is not claimed that the law is perfect, or ever was, but it was the very best that the Legislature would pass. By and by, when the enormity of ruthless and senseless loss of teeth is protested against by some of the more enlightened citizens, as well as the educated dentists, it will be with some degree of assured success that an attempt can be made to alter and perfect our laws. Your committee realizes that it is the hardest thing in the world to argue with a man whose whole system is throbbing with the convulsive leaps of an aching tooth and to win him to believe that he ought to ride several miles, perhaps through a rainy night, to get that kicking tooth pulled by a *regularly authorized dentist*, when a doctor near by could do it, or even a greater bungler, the carpenter or blacksmith. The law means to cover only such extreme cases, and when it lets in the public tooth extractor it is by a straining that is beyond the law.

Advance of the Profession.—We feel justly proud of the advancement that our profession has made and is making, and desire with all our hearts that it should continue to advance indefinitely; and while we would not object nor discourage in any way the M.D. to be preliminary to D.D.S., we think it far in the future history of this country before we would recommend that a man should have such an immense stock of knowledge before he should be permitted to practice any of the elementary principles, but in all cases he should be thoroughly qualified to practice what he proposes to do.

The Code of Ethics.—We approve heartily what the President has said on this subject, and that examination and consultation fees are just and right.

Third, dental literature and the secular press might well be merged into one head for consideration. The dignity of any literary publication should be maintained. Each practitioner should be his own critical judge as to what should properly represent his profession in his office. The point with reference to a standing committee to represent the profession in all public expressions is a very good one. Your committee thinks it exceedingly proper to maintain a careful judgment upon what is said to be the highest wisdom of dentistry. The public might be taught by judicious articles officially prepared, and the papers would publish them when appropriate. It is not to be expected that any article will be gratuitously inserted, however full of exact and progressive knowledge, if no respect has been paid to the manner of its preparation. Newspaper men, like other men, will do anything when it not only does not conflict with their interests, but rather contributes to the acceptability of their publications. Your President strikes the keynote of a proposition that, fully matured and properly adjusted to the wants of the profession, the public, and the paper men, would be valuable to the profession of dentistry. Your committee desires to cordially emphasize this point, and expresses the hope that action will be taken, at least to talk of the plans.

Fourth, the subject of dental schools is discussed. Too much stress, it is thought by your committee, cannot be put on the importance of using intelligent judgment, both in the demand upon our schools and the selection of proper ones to attend. Your committee would fully agree with the President in urging upon parents and other preceptors the importance of looking into the standing of the schools as to their intrinsic make-up, and as to their relation to the highest professional tribunals. But, in addition, your committee, as a man, urge upon the youth the necessity of preparation from a literary standpoint before actually entering upon the study of dentistry. It is not claimed that a youth may not make a dentist without a literary qualification, or that it has not been done in the past, but your committee would respectfully claim that the youth would rise easier, and possibly to a higher point professionally, with literary training than he would or could without it. A course of schooling does nothing if it does not teach a youth mental skill in using himself to learn anything before him, and your committee would claim that he can use intellectual muscle upon the problems of dentistry as well as upon lawsuits and sermons.

All of which is respectfully submitted. D. R. Stubblefield,
P. D. Houston,
G. S. Pearcy,
Committee.

DENTAL TECHNICS.*

BY JAMES A. DALE, D.D.S., NASHVILLE, TENN.

THE Department of Dentistry of Vanderbilt University, at all times ready and anxious to adopt the latest and most approved means of teaching, and realizing the necessity for a more methodical training and drilling of the Freshmen students than heretofore, introduced at its last session that which is new at least to the South, and has only been taught for a few years in a limited number of the Northern and Eastern colleges: "Dental Technics," operative and prosthetic.

While preparing for teaching dental technics, Dr. D. M. Cattell, of the Northwestern University, of Chicago, generously gave the benefit of his several years' experience, enabling us to begin our work far in advance of the earlier classes. Our work in the operative department in many respects is similar to that taught by him.

The student is benefited in many ways by this manner of teaching. Principally it is a manual training. The fingers become skillful in the proper handling of instruments and the eye familiar with the tissues later to be operated upon. In the operative department, as we now teach it, it is about as follows:

Using Black's "Dental Anatomy" as a text-book, the student is drilled upon the principal technical terms, tooth forms, their surfaces, angles, peculiarities, and malformations, using charts which have been enlarged from the cuts in the text-book.

Next we take up the study of pulp chambers, canals, and the relation of the structural divisions to each other. This is accomplished by making from two to four dissections of each tooth.

The student is provided with a box of wooden blocks, an especially ruled printing book, an inking pad, and a stick of sealing wax.

Owing to the difficulty in securing sufficient teeth necessary for this work and for convenience, the class is divided into pairs and numbered, each making a different dissection of the tooth, and comparing notes as they progress. For instance, to-day the odd numbers cut the mesial aspect and the even numbers cut the labial aspect of a central incisor; tomorrow it would be reversed, and the even numbers cut the mesial aspect and the odd numbers cut the labial aspect of a lateral incisor.

Beginning with the superior central incisor and studying each tooth in regular order, three a week, the student fastens the tooth on the block, leaving exposed the surface to be cut as are those in the boxes exhibited. The block is then fastened in a small bench vise, and with a selected file the process of dissecting is begun, the surface of the tooth being cut away until the pulp chamber is exposed, when the pulp canal is explored with a fine piano wire broach, which is left in the canal while the filing progresses, so that the canal will not be destroyed. When the broach is reached it is removed, and with a fine gold file the surface is smoothed; then with a sharp enamel chisel a fine line or groove is cut at the expense of the dentine, showing the line of union and thickness of the enamel, after which the block is removed from the vise and inked, and a row of prints is made in the book, each student printing his partner's tooth as well as his own.

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*Read before the Tennessee Dental Association, March, 1894.

This is followed throughout the sixteen teeth, eight upper and eight lower. Not less than three dissections are made of the first and second molars, and as many of the third molar as the student cares to make.

When anything out of the ordinary is found, such as pulp stones, broken canal drills, and nerve broaches, which is of frequent occurrence, the attention of the class is called to it and they have an object lesson on what they will encounter in practice.

After the required number of dissections have been made and each printed as it was finished, they are required to print on a sheet in regular order all the dissections made, a copy of which is kept for future reference. When this is complete you can readily see that the student has a thorough knowledge of the size, shape of the roots, pulp chambers, and canals, as well as a knowledge of the structural divisions of the teeth and their relation to each other.

The next step in this course is selecting a number of carious teeth which are also fastened to a block with the wax, or in plaster, and the student is taught how to excavate the cavities, open pulp chambers, and cleanse root canals, and is next instructed in applying medicines, temporary dressings, and fillings with the different root-filling materials, following as near as possible the teachings of the Professor of Operative Dentistry. A number of the teeth are dissected, that the students may see the degree of success attained in root filling.

Next is the preparation of the simpler classes of cavities, using hand instruments only, and filling the same with all the principal filling materials, gold, amalgam, tin, cement, gutta-percha, and combinations of two or more, and finishing and polishing of same. The students thus become familiar with the varieties of instruments and their use before they are permitted to operate at the chair in the infirmary.

The filling of the old teeth is the most unsatisfactory part of the course, as they are so brittle that they are easily broken, and it is almost impossible to make a good filling in them. We expect next session to substitute bone or ivory in which to prepare cavities and make fillings.

In the Prosthetic Department, besides the usual drilling in taking impressions, making models, taking bites, arranging teeth, and making plates, we have introduced the draw and screw plates, such as are used by jewelers, and with which the student is required to make a series of tubes, bolts, jack screws, etc., such as you see on these cards, and later in the session is instructed in their practical application in the correction of irregularities. The first step in this work is making a number of taps, shaping and cutting threads on them, which are used to make threads in the nuts and tubes; next in making a variety of drills, after which lessons are given in tempering not only these but all instruments, such as chisels, excavators, and pluggers. German silver and brass is used in the construction of these appliances. Every joint in the tubes is soldered as well as the heads of the screws. This gives the first lessons in the use of the mouth blowpipe, after which they must be highly polished. At this time pupils are instructed to a limited extent in the making of the simpler instruments. It is only after repeated efforts that the degree of perfection which you see on the card is reached.

This work prepares the student for his work later in using the precious metals in both plate, crown, and bridge work. At the close of the regular work in this department, which lasts about four months, many become so interested in it that they employ a part of their time in making instruments and small appliances, such as pluggers, excavators, enamel chisels, nerve broaches, separators, and bellows blow pipes.

Our course has not yet reached perfection. There are many points which need improvement and which will claim our attention at each succeeding session until the very best possible results are obtained. Our first efforts are very gratifying, as the practical operations in both infirmary and laboratory performed by the Freshmen students show marked improvement over previous years.

THE PROPER TRIMMING AND SHAPING OF THE ENAMEL MARGINS.*

BY R. D. CRUTCHER, D.D.S., LEWISBURG, TENN.

THE subject which I am to present to you to-day is one of vast importance, and one, I am sorry to say, which is sadly neglected by the masses of the dental profession. I know of but one thing which could be placed alongside this so sadly neglected subject, and that is the improper finishing of the various kinds of fillings which are turned loose upon the public who intrust themselves to our care for the proper restoration of their dental organs, and still this is an everyday occurrence with many of the profession who are considered high up in the rank and have what some term enviable reputations. I, for one, would much rather have less reputation and do more successful work in the restoration of these organs for a greater length of time, and if it be in my power, make it good for all time to come. I am somewhat like my friend Crawford said of himself in one of our previous meetings: "I am not in the profession for the mere glory that is in it, but for the restoration of the dental organs in the best possible way to prevent the recurrence of any future decay for poor suffering humanity."

There are six classes of cavities which we have to deal with: (1) Coronal, (2) buccal, (3) lingual, (4) palatal, (5) labial, (6) approximal; and each of these have subdivisions:

(1) The first, or the coronal cavity, I will divide into two classes: (*a*) the defective sulci; (*b*) where the entire coronal surface is involved more or less. We take up the first where the sulci are numerous. After thoroughly removing the decay there may remain overhanging walls of enamel, which to my astonishment is so often left, and the operator, it matters not how skillful he may be, cannot make a perfect filling, though to the naked eye it may be all that could be desired, using any one of the many materials which have been placed on the market at our disposal. We should, before attempting to fill the cavity after it is properly cleansed, remove the overhanging walls or margins, making them almost perpendicular, flaring the walls of the enamel slightly outward, making them as smooth as possible with sharp chisels, leaving no chalky substance like we often find where the lime salts has been dissolved from among the small enamel rods, after which you may polish if necessary with pumice or any chalk that is at hand. In-

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stead of always finding these sulci as I have above described, we sometimes have them separated by a bridge of enamel possibly the eighth of an inch thick after they have been opened and the decay thoroughly removed (though under the enamel the greater part of dentine is removed), leaving it nearly without support, which to my surprise, is very often left and filled in this manner, causing a failure and the loss of the tooth before the patient hardly realizes the fact, when it could be avoided by the removal of this bridge of enamel and throwing the two cavities in one, and finishing as above described. I will admit that this operation is not always necessary, and especially where you have not been compelled to remove the dentine underlying this bridge of enamel caused by the deep inroads of decay, which we so often find present.

(2) The buccal cavities I shall designate by the letters *a*, *b*, and *c*; *a*, the cavity following the sulci, which we so often find in the lower molar beginning with the center of the tooth near the coronal surface, extending sometimes to the gum or gingival margin, and again it may not extend more than half or two-thirds of the distance. This class of cavities as a rule are very easily managed. After the cavity has been prepared arm your engine with small corundum points (fine grit), then polish the walls of enamel, removing all broken down enamel, leaving the walls slightly flared outward or making it appear as though it was slightly countersunk. *B* is the class of cavities which we find extending from the anterior to the posterior approximal wall of the tooth at the gum margin, sometimes extending beneath, and again hardly to. This character of cavity varies sometimes from very narrow to rather broad in width, and one which we find will sometimes baffle the very best skill: when the enamel is slightly softened, caused by the chemical action brought to bear on the lime salts connecting the little prisms, it should be removed and an enamel more dense sought for. Upon arrival, proceed as before in some of the above-described modes of dressing the walls, leaving no overhanging walls to be fractured soon after leaving the office. The cervical margin should be carried slightly under the gum, removing all enamel and approximating the cementum. Unless this is done you are likely to fracture the walls of enamel, which may be left between the filling and cementum, there being so small a piece in width; and as we all know at this point, it would only be folly to leave it. The character *c*, which comes last of the three forms, is one involving the whole buccal surface, more or less, of

either upper or lower molars. In this character I would advocate the removal of the entire enamel at the coronal surface, which may overhang the cavity, shaping as in the above, so there will be no spliting loose of the enamel rods to cause a failure. The anterior and posterior walls should be dressed likewise, and the cervical margin dressed as was described in *b*.

(3) Lingual and (4) palatal: these two I will treat under one head. The Lord seems to favor us very much right here, from the fact that the smallest number of cavities are found on these surfaces, the enamel being much thicker, and also having the tongue to play about, continually keeping them bathed off; though sometimes we have defects in the form of deep sulci demanding our attention, or the slight recession of the gum in older persons, giving rise to erosion at the connective point of enamel and cementum, or gingival margin. Sometimes an application of nitrate of silver at this point will be sufficient, unless the patient objects. Then I would dress as described in *b*, of the buccal cavities. The sulci may be cleaned, removing everything in its track from start to finish, leaving the walls perpendicular, as there will be no necessary strain to cause any giving way. There are some other cavities of minor note that I will not mention, so I will now pass to the fifth, or labial cavities.

(5) The labial cavities are what we might term something very difficult in a great many cases. For instance, the cavities of the inferior teeth, extending low under the gum, cause the most of us to think things which, if we were to only speak, would make our patrons blush in disgust. I find that in some cases it is necessary to split the gum parallel with the axis of the tooth, dissecting it back, as it were, to give us proper access. Then upon removal of all dead tissues, we may pare the walls of enamel off as near perpendicular as possible, and proceed to polish, so that we may have a smooth surface to build to. In this paper I am not figuring on the retention of fillings, as you readily see, but to impress ideas of proper trimming and shaping the margins of enamel so as to keep down future decay, if it be possible. We have another character of cavity on the labial surfaces found on the superior teeth (however I will say before going further, that we have the same character of cavities in the upper teeth as those described above in the lower teeth, but they are much more desirable to labor with) which do not extend under the gum, sometimes leaving from the sixteenth to the eighth of an inch of space between, extending almost from

anterior to posterior approximal surfaces, very broad. The surfaces may be pitted, leaving considerable space between each of the pits. I have seen this character left in this manner and filled, only to give way very soon. Cut these pits all into one, going clear across the tooth, removing all soft enamel; prepare your walls in line with the enamel rods or prisms; polish, leaving no overhanging surface to split off, and in this way you will not have them to return in a short while a failure; and again it will look very much more sightly to the casual observer.

(6) Now I pass to the last, or approximal surfaces, taking up first those of the anterior twenty teeth, and classing them in three groups: (1) the simple cavities, which may be very easily approached, considering the number of valuable appliances for separation, taking care, however, not to use the file to produce the desired separation, rendering the operation more difficult to perform, for we have every device necessary to separate without having to resort to the file, that we may destroy the contour of the tooth, or teeth, as it may be. The simple cavities shall be treated in this manner (considering that we have the desired separation): First cleansing the cavity of all foreign substances, I will dress the enamel margin with suitable-sized excavators (taking care to have them very sharp so that they will properly perform the duty required of them), removing all traces of enamel that seems to be dissolved or softened by the ravages of decay, finishing by slightly flaring the walls. In this manner, if the remainder of the operation is properly performed, you will be sure to meet with success. (2) The second group is that class of cavities found in the incisor teeth, sometimes extending deep down under the gum margin, or it may not extend farther than the gum margin, and still sometimes it may not extend more than half the distance from the cutting edge to the gum margin; but the cutting edge is split from over the cavity, or the caries has undermined the enamel at the cutting edge, leaving nothing to support it. In this class I would always remove the cutting edge back to the point where we may find a support, making a perpendicular wall, dressing with cuttlefish disks; finishing up the cervical margin with sharp excavators, leaving it in the shape of a U after one-half is removed. (3) The third or last group is that character of cavities which we find in the bicuspids where the coronal surfaces of enamel have broken through into the approximal cavity, or it (the caries) may have undermined this bridge of enamel, leaving it without support, making it neces-

sary for us to remove it or meet with failure. In order to meet with success, remove this bridge after getting the proper separation. Cleanse the cavity of all *débris.* We will now give shape to the enamel margins, paring off with chisel the overhanging walls at the coronal surface, removing every particle of enamel that does not have a firm support under it. I would then follow the perpendicular walls, satisfying myself very fully that I was leaving no softened enamel, flaring these walls slightly outward until I approximate the cervical margin, or floor of the cavity. This I would place in the shape of a U, if it would admit; and if not, I would make it dovetailed, beveling the edges at the cervical margin, that I may not fracture or powder the wall during the introduction of my filling. I should have classed the cavities of the molars with those of the bicuspids, from the fact that they (the molars) are treated almost or quite as the bicuspids, with the exception of the simple cavities that appear near the gum margin. In this class I would open from the side, being careful to separate as much as possible without injury, and then by examination I would find the closest point of access to cavity of decay, whether it be from buccal or palatal surface; if the lower molar, then lingual surface. Then I would open, cleanse, and make ready for the trimming of the walls, which I would finish by the use of excavators, paring the walls of enamel to their proper shape, leaving the walls slightly beveled, as I have already described.

There are other cavities connected of minor note, which I will not attempt to mention.

Associations.

MISSISSIPPI STATE DENTAL ASSOCIATION.

The Mississippi State Dental Association will hold its twentieth annual meeting in Natchez, beginning with the first Tuesday (first day) in May, and continue in session three days.

It is the desire of the officers and Executive Committee to have every dentist in the State, whether a member or not, present, as we are to have the grandest meeting ever held in the history of the Association. We will have good clinics in all branches, good papers on all subjects, and in fact everything that goes to make a first-class meeting. Reduced railroad and hotel rates will be procured and notice given in time. Come and be with us in this meeting, to be held in one of the most beautiful and historic cities in the South.

Fraternally,
J. D. Killian,
George W. Rembert,
P. H. Wright,
Executive Committee.

TENNESSEE DENTAL ASSOCIATION.

The twenty-seventh annual meeting of the Association was held in Nashville March 26–29, and was in many respects probably the best the Association has yet held. Nearly one hundred were in attendance. The following programme was carried out:

The Association convened at 10 o'clock in the lecture hall of the Dental Department of Vanderbilt, with President W. J. Morrison in the chair. Father P. J. Gleason opened the meeting with prayer.

In the absence of Dr. L. G. Noel, Dr. J. Y. Crawford made a brief address of welcome, which was appropriately responded to by Dr. S. W. Foster, of Decatur, Ala.

Then followed President Morrison's annual address. The address was timely and of much interest to the members of the Association, and was referred to a special committee composed of Drs. Stubblefield, Houston, and Blakemore.

Dr. Noel having come in, he was called on, and made a felicitous address of welcome.

The Chair announced the following Committee on Membership: Drs. Blakemore, Crutcher, and H. W. Morgan.

The Committee on Membership reported that some new members had been in the habit of advertising lower prices than other members of the profession for even a better grade of work. The matter was referred to a special committee, with the request to report during the session.

Adjourned until 2 P.M.

AFTERNOON SESSION.

The President, Dr. W. J. Morrison, in the chair.

Dr. John S. Marshall, of Chicago, read an able paper entitled "Congenital Fissures of the Upper Lip and the Vault of the Mouth," the discussion of which consumed the entire afternoon.

A reception at the parlors of the Young Men's Christian Association at 8 o'clock was announced.

Adjourned to meet in the lecture hall of the Y. M. C. A. at 2 P.M. Tuesday.

SECOND DAY, Tuesday, March 27.

The morning was devoted to clinics in the Vanderbilt Dental Infirmary.

AFTERNOON SESSION.

The President, Dr. W. J. Morrison, in the chair.

Dr. R. B. Lees, of Nashville, presented a paper on "Local Anæsthesia," which was discussed by Drs. Stubblefield, Noel, Beach, Marshall, Hicks, Patrick, Brown, Shepard, Cook, Freeman, Kulp, W. H. Morgan, Crenshaw, and White.

"The Missing Teeth of Man" was the title of the next paper, read by Dr. A. H. Thompson, of Topeka, Kan. Discussed by Drs. Patrick, Marshall, Beach, and Freeman.

The following visitors were elected to honorary membership: Drs. J. J. R. Patrick, Bellville, Ill.; John S. Marshall, Chicago, Ill.; A. O. Hunt, Davenport, Ia.; William O. Kulp, Davenport, Ia.; S. W. Foster, Decatur, Ala.; A. H. Thompson, Topeka, Kan.; C. V. Rosser, Atlanta, Ga.; E. E. Fruit, Hopkinsville, Ky.; W. G. Brown, Atlanta, Ga.; F. H. Smith, Water Valley, Miss.; and W. I. Martin, Franklin, Ky.

Adjourned until 10 o'clock Wednesday.

THIRD DAY, Wednesday, March 28.

After two hours devoted to clinics, the Association assembled at 10 o'clock at the Y. M. C. A. hall.

Dr. Stubblefield, Chairman of the committee to which had been referred the President's annual address, reported. The report was received and adopted without discussion.

Mr. Sidney Page was elected the scholarship beneficiary extended by the Baltimore Dental College.

Dr. Kulp, of Davenport, Ia., read an interesting and instructive paper entitled, "Dental Nomenclature of the Surfaces of the Teeth and Notation of Cavities," which was discussed by Drs. Patrick, Freeman, W. H. Morgan, Noel, Henry W. Morgan, and Marshall.

Adjourned until 2 P.M.

AFTERNOON SESSION.

The President, Dr. W. J. Morrison, in the chair.

Dr. J. P. McDonald, of Shelbyville, read a paper on "Fraud," which was discussed at some length by Drs. Stubblefield, Richards, W. H. Morgan, Crawford, and Freeman.

Dr. Smith, of Water Valley, Miss., read a paper on "Dentine," which was discussed by Drs. Crutcher, Blair, Crawford, W. H. Morgan, Freeman, Beach, McDonald, and Leer.

The Association was invited to a banquet at the Nicholson House at 10 P.M.

Adjourned until 10 A.M. Thursday.

FOURTH DAY, Thursday, March 29.

The President, Dr. W. J. Morrison, in the chair.

A description of a case of irregularity, by Dr. Gordon White, with models and appliances used, and a paper by Dr. J. A. Dale on "Dental Technics" occupied the morning, Drs. Gray, Kulp, Patrick, Freeman, Lees, and Morgan taking part in the discussion.

The Treasurer made his report, and the sum of twenty-five dollars was voted Dr. J. J. R. Patrick to further his investigation and tabulation of prehistoric crania.

Adjourned until 2 P.M.

AFTERNOON SESSION.

The Committee on Clinics reported the following:

Clinic given by Dr. Brown, of Atlanta, gold filling in grinding surface of superior left cuspid.

Clinic given by Dr. Dale, of Nashville, porcelain crown with Downy furnace.

Clinic given by Dr. Gray, of Nashville, molding of cusps for gold crowns.

A case was presented by Dr. Shepherd, of Columbia, of the removal of necrosis of alveolar process, including floor of antrum.

Treatment of dead pulp by Dr. Blair, of Louisville, with vaporizer.

The afternoon was consumed in transacting business, electing officers, and selecting the next place of meeting, with the following result: President, Dr. W. H. Richards, Knoxville, Tenn.; First Vice-president, Dr. W. P. Glenn, Humboldt, Tenn.; Second Vice-president, ——————————; Recording Secretary, W. P. Houston, Lawrenceburg, Tenn.; Treasurer, H. E. Beach, Clarksville, Tenn.; Corresponding Secretary, W. J. Morrison, Nashville, Tenn.; Executive Committee, Drs. B. D. Brabson, R. A. Melindy, Knoxville; G. R. Pearcy, Jackson, Tenn.

The next meeting will be held in Knoxville, Tenn., Tuesday following July 4, 1895.

THE BANQUET.

The banquet to the visiting dentists last night at the Nicholson House was one of the most elegant that has ever been given in Nashville. There were one hundred and four plates. The first course came at ten o'clock promptly, and after the course had been disposed of there was a toast. So a toast followed each course till the whole was disposed of. The lateness of the hour precludes detailed mention, but it may be said that every speaker did himself justice and won the applause of all present.

Manager Hancock prepared an elegant repast, and arranged the tables beautifully. The tables were decorated neatly with cut flowers, and presented a most engaging appearance. The *menu* was as follows:

Blue Points. Celery. Clear Turtle Soup.
Sliced Tomatoes. Spanish Olives. Broiled Pompano, Lemon Butter Sauce.
Parisienne Potatoes. Rhine Wine.
Spring Chicken Saute with Mushrooms. Asparagus. Frog Legs in Crumbs,
Sauce Roumlade. Bouliac. French Peas. Maraschino Punch.
Roast Prairie Grouse, stuffed with Truffles. Dressed Lettuce.
Mumm's Extra Dry.
Strawberries with Cream. Neapolitan Ice Cream. Assorted Cakes.
California Fruits. Mixed Nuts. Layer Raisins.
Pineapple Cheese. Crackers. Coffee.

The toasts responded to were as follows:

"Dentistry of the Past"—Prof. W. O. Kulp, D.D.S., Davenport, Ia.
"Dental Journalism"—A. H. Thompson, D.D.S., Topeka, Kan.
"Specialism in Medicine"—John S. Marshall, D.D.S., Chicago, Ill.

"Our Dental Colleges"—Prof. A. O. Hunt, D.D.S., Iowa City, Ia.
"Professional Ethics"—Prof. J. P. Gray, D.D.S., Nashville, Tenn.
"Our Patients"—W. H. Richards, D.D.S., Knoxville, Tenn.
"Dentistry of the Present"—B. S. Cook, D.D.S., Chattanooga, Tenn.
"The Press"—Dr. G. C. Savage, Nashville, Tenn.
"The Press's Relation to the Profession"—Dr. R. A. Halley, *Nashville American.*
"The Tennessee Dental Association"—Prof. W. H. Morgan, D.D.S., Nashville, Tenn.
"Our Guests"—Prof. D. R. Stubblefield, D.D.S., Nashville, Tenn.
"Dentistry of the Future"—John J. R. Patrick, D.D.S., Bellville, Ill.

The toastmaster was Dr. J. Y. Crawford, who performed his part most admirably, introducing each speaker in the most beautiful language.—*American, Thursday, March 29.*

ALABAMA DENTAL ASSOCIATION.

THE twenty-fifth annual meeting of this body will be held April 10–13, inclusive, in the reading rooms of the Exchange Hotel, Montgomery, Ala. This promises to be one of the most interesting and profitable meetings in the history of this excellent Association. We are informed that many distinguished practitioners from other States are to be present. The papers to be read and the clinical features presented will be of extraordinary value to the profession.

The State Board of Dental Examiners will also meet at the same time and place.

GEORGIA STATE DENTAL ASSOCIATION.

THE Georgia State Dental Society and Examining Board will hold its next annual meeting at Tybee Island, Ga., June 13–16. To the profession of the neighboring States a cordial invitation is extended.

Besides this general invitation, a most cordial one is extended to each of you personally, and allow me to insist on your acceptance if it be possible for you to do so.

Very truly yours, O. H. McDONALD, *Cor. Sec.*

Editorial.

AN IMPORTANT DECISION—THE LAW REGULATING THE PRACTICE IN TENNESSEE TESTED.

Some time ago the State Board of Dental Examiners refused to register holders of diplomas of the Knoxville Dental College, that institution not having complied with the board's advanced standard of requirements for graduation. Suit was brought by the college in the name of M. B. Williams, one of its graduates, for a *mandamus* against the State Board to compel it to recognize his diploma. The case was tried before Judge Moon, at Chattanooga, in February, who decided, according to the *Chattanooga Times* of March 3, that "the powers of the State Board of Dental Examiners are at least *quasi* judicial, and that the courts are powerless by writ of *mandamus* to force any board of inferior jurisdiction, having judicial powers, to exercise those powers in any particular or designated way or manner; but if the power has once been exercised by said board, and its judicial determination made known, then if any other act by the board is to be performed—such as the mere issuance of a certificate —after the determination of the judicial question, such act is not judicial in its character, but purely ministerial, and the power of the court to force by writ of *mandamus* the performance of a ministerial act of this character cannot be questioned."

Thus it will be seen that the right of the board under our law to determine the reputability of a dental institution of learning is fully sustained, and its decision must stand unless overruled by the Supreme Court, to which tribunal an appeal was taken.

BOOK NOTICES.

Catchings' Compendium of Practical Dentistry for 1893. B. H. Catchings, D.D.S., Editor and Publisher, Atlanta, Ga. Price $2.50.

The fourth edition of this valuable collection of a year's contributions to practical dental knowledge is before us. No library is complete without it. The advanced practitioner cannot afford to ignore it, and both teacher and student must have it. It is far superior to former issues, and is a monument to the unwearied energies of an inventive, thinking, and writing profession. Dr. Catchings has shown rare skill and much care in his selections, and deserves much praise for the conception and manner in which he has from year to year carried out his idea.

T·H·E

DENTAL HEADLIGHT.

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Original Communications.

LOCAL ANÆSTHESIA.*

BY R. B. LEE, M.D., D.D.S.

THE subject selected for consideration in this paper is of such great interest to our profession that I deem it worthy of your attention at this time. I shall confine myself, however, to but a few thoughts in connection therewith. The purpose of the writer in choosing these topics is, if possible, to awaken a greater interest to their application to dentistry. Upon occasions like the present much is written and said for and against the use of anæsthetics by dentists (especially of ether and chloroform) unaided by the medical practitioner. These discussions have been fruitful of great good to our profession, and this motive alone has induced me to prepare this paper.

Attempts have long been made to obtain local anæsthesia. Like general anæsthesia, it is of comparatively recent date. The discovery of general anæsthesia a little less than half a century ago has but intensified the earnest desire for agents to be applied locally to produce insensibility to pain. This inquiry has resulted from two causes: first, it lessens the danger; second, it confines the anæsthetic to the field of the operation.

Many soothing agents have been used to produce local anæsthesia; some have been a disappointment, while others may be said to be within the domain of the practical.

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*Read before the Tennessee Dental Association, March, 1894.

What are the benefits to be derived in their use? First, less danger; second, the patient is free from shock and vomiting; third, fear and apprehension are vanished; fourth, the patient is conscious and free to follow the instructions of the operator; fifth, less time is consumed; and sixth, the operator can dispense with assistance. Any one or all of these conditions or considerations would indicate the preference on the part of dentists for a local anæsthetic. Most operations that come within the domain of our profession are frequently simple and of short duration, and consequently do not require protracted insensibility. Agents and means employed for the relief of suffering by stupefying on applying locally are as old as time itself. Carbonic acid, the compression of nerve centers, the use of cold applied to the surface, such as ice and salt, refrigerating agents, as for instance Richardson's apparatus, chloride of ethyl carbolic acid, cocaine applied to the surface by wads of cotton or introduced by the hypodermic needle, and others, have all been tried with some success. The refrigerating agents have received the greatest notice with but perhaps one exception, cocaine. Anæsthesia by refrigerating agents is somewhat difficult in its application; it is rather painful, may produce trouble after its effects have passed off, and is at best but superficial. Cocaine as a local anæsthetic has been in use since about 1885. Its introduction was hailed with joy by many in the profession, and it was said to be a panacea for minor surgical operations, and especially those of the mouth and teeth. The predictions of the enthusiast's time has not fulfilled; in many respects it has been a disappointment to our profession as well as to the profession of medicine, and yet much suffering has been alleviated by its administration. Its utility is principally confined to the mucous membranes, and the softer the membrane the sooner its effects are reached, and the more decided its anæsthetic influence. The anæsthetic effects are said to be produced better by sprays of a weak solution than its application by wads of cotton or stronger solution, which in many cases may be applied with impunity without apparent anæsthesia.

Constitutional effects of cocaine are manifested by a feeling of faintness, weakness and trembling of the limbs, pallor of the face, etc., which appear from one to fifteen minutes after its administration in large doses. The quantity to be used is an important consideration, and is a fact hard to determine. The individual susceptibilities having much to do with the toxic effect, the per cent. and quantity to be used in each instance has not as yet been determined.

The usefulness of cocaine in dentistry is limited to the extraction of teeth, removing inflamed and indurated gums, opening abcesses, and destroying sensibility of teeth in the preparation of cavities for filling. The preparation of a fresh solution of the desired per cent. affords the best results in its application. Frequently solutions obtained from druggists are of no benefit. Cocaine injected into the gums in small quantities affects but a small area of mucous tissue on account of the fibrous construction of the mucous membrane, and hence it is not readily absorbed and disseminated to any great extent. Therefore, in order to produce anæsthesia in the parts to which it is applied, it becomes necessary to insert the cocaine at several points somewhat removed from the first point of injection. Four or five minutes is allowed to elapse before operating. Its application to dentistry has not been as fruitful of results as in medicine. Further time and study, however, may fulfill our expectations.

NITROUS OXIDE,

composed of one equivalent each of nitrogen and oxygen, is a colorless, inodorous gas; and was successfully introduced into the profession by Dr. Horace Wells about 1844, who at that time demonstrated the application of this agent to the profession of dentistry by having a tooth extracted. This was the first surgical operation performed with a modern anæsthetic, the subject being unconscious from the inhalation of the nitrous oxide.

More than fifty years before this, perhaps, it was known that this agent produced exhilaration when inhaled by a person to a certain extent, and among the first experiments those assembled to witness the inhalations were often amused by the grotesque and violent antics of the subject to whom it was administered in stimulating doses. Soon after this it was used quite extensively with varying successes. Doubtless the failures which attended the administration were due to the preparation, impurities, or the manner in which it was given. In recent years nitrous oxide has been used in hundreds of thousands of cases with but few fatal results, and it would seem in some respects to be the anæsthetic suitable to the wants of the dentists for the extraction of teeth where the operation is not a protracted one.

Nitrous oxide has a short anæsthetic stage, unless the inhalation of the gas is continued. The first effects of the inhaled gas is a feeling of dizziness, whirring noises in the ears, and tingling and loss of feeling in the limbs, illusions of the senses. The patient becomes intoxicated, cries, sings, laughs, fights—or, in short, does the bidding of a disordered brain. These conditions soon pass away, however, if the gas is forced upon the patient, and he goes into a state of unconsciousness. The operator grasps the tooth and removes it or performs the operation while in this condition.

The prompt action of nitrous oxide and quick subsidence of the narcosis render it a useful anæsthetic agent where small operations are quickly performed, such as extraction of the teeth, opening abcesses, removing living pulps, lancing the gums. It has been and is used to a limited extent now in the performance of capital operations.

Experiments demonstrate that, in order to develop the full physiological effects of this agent, from five to seven gallons must pass into the lungs in about one minute's time. To diminish the gas or divide it into doses at intervals would defeat the administration. Breathed into the lungs, it is taken up by the circulation and dissolved in the blood, and the rapid return to consciousness is due to this fact; while chloroform enters into chemical combination like alcoholic stimulants, and therefore requires more time to be eliminated from the system. While apparently an inoffensive agent, the gas is frequently impure, and in the hands of careless and inexperienced operators may not be as harmless as is generally believed.

Ether and Chloroform.

The term "anæsthetic," suggested by Dr. Oliver Wendell Holmes, means an agent capable of producing anæsthesia or insensibility to pain. Surgeons in all parts of the country have been interested in no little degree with the importance of this subject, and one of more importance could not be found for investigation. Since the discovery of ether by Morton, in 1846, and of chloroform by Simpson a little later, the medical profession, especially, have devoted considerable time and thought to their application in the performance of surgical operations.

Freighted with beneficence to suffering humanity, operations are now attempted and successfully accomplished which a little more than forty years ago would not or could not have been performed.

Before the discovery of these agents and their application, patients afflicted with diseases requiring operations were either persuaded or forced to submit to the operation by mere physical force. They were often dragged to and placed upon the operating table, where they were held by strong men employed for the purpose, while undergoing terrible ordeals. Now they can be given a stimulant or opiate a short time previous to the administration of the vapor, so in some measure to allay the fear or apprehension of the operation, and while in a state of partial sensibility can be carried and placed upon the operating table, where the operation is performed. The patient recovers to find himself lying upon his couch, as though awakening from a dream. When the vapor of ether or chloroform is inhaled a sense of faucial irritation and the need of air is experienced, and more or less cough is produced. These conditions soon disappear, however, and the patient gradually passes into a state of insensibility. Anæsthesia is not a dangerous condition if produced and maintained in harmony with the laws of nature. Every intelligent physician understands that an electric current, if given lightly at first and then gradually increased as the patient is able to bear it, can have in a short time a volume passing through the system which, if inducted too rapidly, would produce shock sufficient to cause death.

Previous to the administration, the fear of the patient, false impressions, apprehension of an unsuccessful issue, should be removed as far as possible, words of encouragement, cheer, and sympathy should be spoken, and yet with a due appreciation of the gravity of the situation. The entire system is affected by anæsthesia, but not equally. So long as the medulla which presides over respiration is sufficiently active to continue the neural currents, the organs will perform their functions in a modified condition.

This is what we want: a state of activity of all the organs modified while we have complete insensibility. The first effects of the agents is loss of consciousness; second, of sensation; and third, of muscular force. With ether a certain quantity of air is at first admitted during the inhalations, to prevent too great irritation of the air passages. This is necessary. The strength of the anæsthetic is gradually increased until the air is entirely excluded. Ether itself furnishes sufficient oxygen to preserve all the life process. In chloroform the opposite of this rule is observed, not more than three and one-half per cent. of the agent should be given, air should be admitted in large volumes, thus avoiding accident. The patient passes from one stage to another without apparent shock, as though in a gentle sleep. The administration of stimulants such as whisky and peach brandy or opiates, as atropia or morphine, has been recommended and practiced by many practitioners for years for the purpose of stimulating the heart action, or allaying irritability. Chloroform administered in 800 cases preceded by peach brandy without fatal issue is the record of one physician residing in this city. In the administration of any agent for general anæsthesia it becomes necessary for the operator to have competent help at hand to assist in the case. In some parts of the country men devote all their time in this direction and take all the chances. This seems to me to be an admirable plan, as it relieves the operator of all responsibility and free to devote his attention to the work before him, lessening the chances of a fatal termination of the case.

INTERSTATE DENTAL PRACTICE.

BY D. D. ATKINSON, D.D.S., BRUNSWICK, GA.

Mr. President: In response to your very kind invitation to present something at your convention, I beg to submit for your consideration a few remarks upon interstate dental practice, and other matters incident thereto. It seems to me that a discussion of this subject at this time is particularly appropriate, as there is now pending before the National Board of Dental Examiners a resolution looking to a uniform system by which the holder of a State license may practice in any other State without further examination. Any action of this kind calls for careful thought.

In the first place, the National Board is an organization which has done and can do much for dentistry, and ought, therefore, to be preserved and sustained in all of its integrity and influence.

In the second place, it can have no power except what it derives from the State Boards, of which it is composed.

In the third place, in order to preserve its influence, it ought not to pass any resolution that would address itself so directly to all State Boards, except it be reasonably certain that it would be sustained in such action, otherwise the resolution would be of no effect, and would be as a dead letter upon the records.

The resolution seems to contemplate giving the licentiate of a

State Board a higher standing than he who holds a diploma of a dental college, in that the first may register at will in any State, while the latter is left amenable to the law, and must undergo an examination whenever he elects to go from one State to another. I do not come, Mr. President, as the champion of dental colleges, nor as opposing State licenses. I believe in that kind of education and qualification that will meet all of the demands of a great and honorable profession, whose integrity is fixed, but, unfortunately, whose dignity is measured in any community by the character of the man who follows it.

Colleges are educators; Examining Boards are not. Both are necessary. One is a chartered, capitalized institution, educating for a monetary consideration; the other, officers of the people, whose duty is to pass upon the qualification after they have been educated of those intending to enter the profession, in many cases without any compensation whatever for their work, and can, therefore, have no other incentive than a desire to serve their profession. As to the monetary character of the dental colleges, the writer has no criticism; it is just and right. If it is right that the individual members of a Faculty should give their time to the college, it is right that they should be paid for it. Nor do I have any criticism for the methods or curriculum of the colleges as now practiced. I believe they are doing a great work. But it will be remembered that it was by the influence of the National Board of Dental Examiners that this raising of the educational standard was accomplished. If by that influence the college term has been raised to three years, tell me some reason why that function to be performed by Boards of Examiners should be discontinued, as argued by some distinguished educators. The young man who diligently applies himself for three years need have no fear of the examination given by a State Examining Board, but he who spends his time in idleness, and by a mere chance manages to get a diploma, will find there a barrier over which his ignorance will in vain attempt to ride. The amendment, "provided such license was granted upon examination," savors somewhat (as does the whole resolution) of inconsistency. If the National Board has induced the colleges to increase their term to three years, and will not now place any college upon its list of reputable colleges which confer its diplomas at a less term, how can it with consistency sanction the granting of a State license to an individual, who is perhaps a first course student, or never saw the inside of a dental college, thereby doing the very thing it objected to in the colleges and defeating the object of its achievement? If the law permits such licenses, let their validity remain within the confines of their own State, and do not give them that character which a license supported by a reputable diploma ought to have.

My own idea about qualification is this: that first, a dentist should be educated in a reputable college, that having after graduation passed a satisfactory examination before a State Board, he should be considered a competent dentist, and be permitted to practice in any State without further examination.

To have a system of uniform requirements it will take more than a resolution of the National Board of Examiners. That Board will have to recommend to the State Boards some plan that will be acceptable to them, and they will in the same pursuit have to get their laws changed to conform to the plan, or else they will be powerless to coöperate, even if they are inclined to.

The lawyer who is skilled in the common law, and who may be eminent in Georgia, may not be familiar with the Statutes of Tennessee or Carolina; but the dentist who is skilled in his profession will be competent anywhere. His knowledge cannot be hemmed in by State lines. He is a skilled dentist. Practice in Tennessee could make no demands on him, but that he has had the same in Georgia. It is vexing that the man who has been a skilled and fully qualified dentist for a score of years cannot change his residence from one State to another without being examined for competency. Hence this demand for uniformity. The whole profession demands it; let us have it, but let the standard be high; not less than a recognized college diploma verified by a license from a State Board of Dental Examiners.

CONCERNING THE PAPER READ BY DR. MILLER, OF BERLIN, BEFORE THE COLUMBIAN DENTAL CONGRESS.

BY A. H. HILZIM, D.D.S., JACKSON, MISS.

In the February number of the *Dental Review* appears an article in the form of a "review," written by Dr. C. E. Bentley. While most of the points are well taken, his style elegant and original, and his paper very interesting from start to finish, he is certainly mistaken in regard to his deductions as to Dr. Miller's method of treating and filling dead teeth. The term "dead teeth" is used here because it is comprehensive and well understood by dentists to include all teeth in which the nerve pulp has become devitalized, from whatsoever cause. In the first place, he is in error when he infers that the practice is confined to Dr. Miller or Europe either. To my certain knowledge there are several hundred dentists in the United States pursuing a similar practice, with great success and satisfaction to themselves and patrons.

We *know* we are *succeeding*, because we have the records for several years back to refer to, in the form of letters from parties for whom we have performed these operations, and, then, we correspond with each other and compare notes. Now, while we do not use the same antiseptics as suggested by Dr. Miller, the principle is the same. We divide the teeth to be treated into several classes, and vary the treatment somewhat to suit the case. As you know, the "slogan" of the present day is "antisepsis," and we keep this in view in all we do. Success depends upon a thorough understanding of the "method" and the strict observance of the directions.

We claim for it, first, more teeth saved than by the old method; second, great relief to both operator and patient in the ease and rapidity of the work; third, little or no pain to the patient; fourth, as it is not necessary to go into the roots with broaches and drills, there is no chance for accidents from this source.

Dr. Bentley says: "The danger of the method lies in the possibility of subsequent decomposition of the pulp remnants." Now this cannot be possible, as every particle of pulp or nerve left in the tooth becomes so impregnated with the antiseptic preparation used that it is thoroughly "mummified," so to speak. The tooth substance itself becomes permeated by way of the dental tubuli, rendering it less susceptible to decay.

Again Dr. Bentley says: "The media of infection can be through the apices of the roots, a leak in a faulty filling, or the ingress of bacteria through a new area of decay." Now, as to the first proposition, the "apices of the roots," even though the whole surrounding tissue becomes diseased from other sources, the infection "could not enter here," because the tooth treated by "our method" is perfectly aseptic, and consequently resists attacks from the outside, even from bacteria. As to the second proposition, "a leak in a faulty filling," this should play no part in it, for if the work has been properly done the "leak" could extend no farther than the "seal" which has been placed over the nerve chamber; and right here is one of the most important points in the whole operation—*i. e.*, sealing the pulp chamber effectually after placing your medicament *in situ.* Now, as to his last proposition, "the ingress of bacteria through a new area of decay," the same reason will apply to this as stated above in reply to his first proposition—*i. e.*, that bacteria could not live in the presence of the antiseptics and germicides used, as their powers are continuous.

We have an abiding belief that the preparation we are using must be very similar, if not identical, with that used by the ancient Egyptians in preparing their mummies. They removed the intestines, as we remove the pulp, and placed their antiseptic in the cavity thus secured.

Our method should not be placed in the hands of a dentist ignorant of asepsis; neither should the old method. *Verbum sat sapienti.*

Selections. . . . .

SCIENTIFIC ROOT FILLING.*

BY DR. N. T. SHIELDS, OF NEW YORK.

Mr. President and Gentlemen: When it is necessary to destroy the pulp, instead of making an application directly upon the pulp itself, I apply the arsenious acid indirectly. A tooth is a microscopical structure. The dentinal fibrillæ are $\frac{1}{3000}$ of an inch in diameter; and by making the application of arsenious acid not at the place of exposure, but upon another part of the tooth entirely, make the application of arsenious acid upon a spot of freshly exposed tooth structure and hermetically seal with gutta-percha, make an application of cocaine to the part of the tooth where the exposure is, and the patient will leave the office perfectly comfortable, and the pulp will die without the patient being conscious that the thing is being done. Leave the application one week, and at the expiration of that time you are able to take a sharp bur and go farther into the dentine, almost to the pulp itself, without one particle of pain; then make a fresh application of arsenious acid and hermetically seal it with gutta-percha and leave it for another week, and the pulp will be perfectly dead, without the slightest inconvenience to the patient, save about the tenth day it will be abnormally sensitive to heat and cold. If the patient takes cold water or hot coffee, and it creates toothache, the way to avoid it is not to allow the hot coffee to touch the tooth. Tell the patient to look for this sensitiveness two or three days after the second application. At the first symptoms of sensitiveness the patient will avoid hot drinks; and if he does take hot soup or hot coffee, the toothache so brought on can be readily relieved by the application of cold water.

By applying the arsenious acid in this way not a particle of it comes in contact with the pulp itself, and hence there is no soreness caused at the end of the root by the acid being absorbed through the foramen. At the expiration of the second week the tooth is ready for the operation of removing the pulp and filling. I always open these teeth with large burs. You can remove the enamel with heavy excavators, but always open the tooth itself into the pulp chamber with a bur, never with an excavator; because if you should open into the pulp canal with an excavator, you would probably fill the canal with chips of hard tooth structure, that would give you a little trouble to remove. You can remove the chips, but it is not necessary to get into that trouble.

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* Read before the New Jersey State Dental Society.

There are eighteen teeth (two first bicuspids, six upper molars, six inferior molars, and four inferior incisors, eighteen teeth altogether) in the human head, from which, if the pulp should happen to be exposed by decay or otherwise, it is admitted almost over the whole land to be an impossibility to remove the pulp and fill the canals. All of you know that; the journals are full of it. It is something that we come in contact with daily; therefore it is one of the most important difficulties that our profession has to overcome.

I have on the table here a package of Donaldson's pulp canal cleansers, No. 5, and with those instruments, as you saw to-day, I can enter any root canal in any tooth. I can invariably fill any root canal in the human head, and you can do the same thing. I can with ease, ninety-nine times out of a hundred, go directly to the apex of any of those eighteen difficult roots that I have mentioned.

Once in a hundred times we come across a canal that we have a little difficulty in entering, but I have never yet seen the canal that will take me over an hour and a half to reach the apex of the root. Are you going to be guilty of the unprofessional conduct of saturating a piece of cotton with an essential oil, and filling over that with cement, and then tell your patients they are liable to have toothache in that tooth at any time, and if they do they must call on the nearest dentist, and all there is to do is simply to remove the cement and remove the cotton and the toothache will be relieved? That mode of procedure has been published in the journals not over three months ago as being dentistry from a scientific standpoint. You can read that in the *Cosmos*, not over three months ago; and it came from a place of great responsibility, the responsibility of the starting point, the dental college. It is in your *Cosmos*, and you can read it. I am willing to go upon record as saying that any man who places cotton, saturated with an essential oil or saturated with anything else, at the apex of a root, or in the body of the tooth, and looks upon it as a permanent operation, or as the best that his profession can afford for a temporary operation, is practicing nothing but diabolical quackery. There is no man in this room who cannot take one of Donaldson's nerve instruments and go up into the bifurcated root canal of the first bicuspids of any patient. Turn to your *Cosmos* and other dental journals, and you will see the scientific practice in root filling; attend any society meeting in the country, and you will find out how they save these teeth without filling the buccal roots.

All operations done in the mouth by dentists come under the head of minor surgery, and surgery is not based upon guesswork. I do not guess that I can cut that man's leg off; I know I can cut his leg off. When we know that we have inserted an instrument in a root a certain distance we can measure that distance exactly; there will be no guesswork about where the apex of the root is, for we can measure it exactly. First, take a bur and open the tooth well; do not leave a projecting piece of enamel. I hear dentists say they do not like to cut away the dentine, because it weakens the tooth so much. But what good will the tooth be to the patient if the roots are not filled? You might just as well have no tooth. Cut away sufficient to have the canal laid open as plainly as the palm of your hand; leave no obstacle in your way; and you will then be able, ninety-nine times out of one hundred, to take a Donaldson nerve instrument and pass it to the apex of the root. The instrument will most of the time be tight. You will extract the pulp first, then place the instrument back in the root, where it will be somewhat tight, and use an upward and downward motion, which will slightly enlarge the canal. You do not enlarge it in one place only, but universally from the base to the apex. After you have enlarged the canal in that way, you take an instrument a little bit larger than a No. 5, which is the smallest, and that will be tight when first inserted; move it up and down as in the first place, and it will make the canal a little larger. Then take a still larger instrument, perhaps a No. 4 Donaldson nerve canal cleanser, and repeat the operation. If you have difficulty in reaching the apex, never abandon the effort, but persevere until you get there, if it takes you a month. You can invariably do it.

We sometimes find a root that is almost twisted twice upon itself —a root curved most tremendously, as we see them at the college museums. We do not meet them in daily practice. Are you going to practice quackery all your life because somebody has had or may have a tooth with such a crooked root? You may have seen those terribly crooked roots, where the tooth almost turns backward. If you persevere with these instruments, you can reach the apices of these roots and enlarge the canals to any size you may desire. Before you begin the enlargement of the canal, take an instrument with a piece of rubber dam attached, and insert that small instrument to the apex of the root, and the bit of rubber dam on the instrument will indicate exactly the length of the root canal. When you come to enlarge the canal the instrument will cut the tooth structure into chips and powder, which will obstruct the canal, and when you then reinsert the instrument you will find that the rubber dam indicator does not come up even with the tooth as it did before, for the reason that the canal is partly filled with broken-down tooth structure. Always keep that little indicator with you until the operation is completed. After you have the root reamed out with these Donaldson root cleansers to the apex, then you take an instrument that was intended for extracting pulps, a Donaldson's nerve extractor, which has a hook on the end of it. You can never extract a pulp with that—you cannot get it into the canal. But take a pair of nippers and snip off the hook, and it gives you the best root plugger in the world. Flatten the end of that instrument, and you have a point that is unequaled by any other instrument made for root filling. Then take soft gold, not a plastic material, but soft gold foil, cut it in very thin strips not wider than the thickness of a pin head; fold that once, and cut that little fold into very small pieces, not larger than half the size of a pin head; then take up with your measuring instrument a very small piece of gold, and, with a steady hand, you can carry that directly to the apex. If it should stop by the wayside, and not go to the apex, your little rubber dam indicator will show it; or if it goes to the apex, as it generally does, it will be indicated by the bit of gold occupying a space its own size at the end of the root. The rubber dam will not quite come in contact with the root, because the piece of gold stops it. If the bit of gold should happen to stop halfway in the canal, the rubber dam indicator tells you that it has not reached the end; and in that case take a Donaldson nerve canal cleanser and go into the root and remove the piece of gold. Take up another piece of gold and carry that to the end. You have the rubber dam indicator all the time before you, so that you can measure and calculate the distance the gold is carried every time.

Gentlemen, if you take this home with you, you can practice it yourselves with arithmetical exactness, filling to the apices all these difficult roots, and larger ones in the same way, but easier, with gold. After the apices are filled with gold, you can, if you choose, finish filling the root with a very fine cement. It is not necessary to fill the whole root with gold unless you so desire.

A word about plastic fillings. When a tooth is filled with a plastic material, instead of in this way with gold, we can only draw the line between the scientific and the unscientific method by relating both. Suppose one is a chloropercha filler, and he has the chloropercha beautifully dissolved, and the root beautifully dry, and everything perfectly favorable to the chloropercha going to the apex of the root. What indication is there that the chloropercha filler depends upon for assurance that the chloropercha has reached the apex of the root? He pumps in the chloropercha until the patient flinches, and he says that means that the filling has got to the end. There never was a greater wrong. You can take this chloropercha and put it in the mouth of the root, and press it and press air into the canal, and you will get the same flinch from the patient. The fact that the patient flinches is no indication that the gutta-percha is at the apex of the root. He flinches from air pressure just the same. When you fill a root with gold you do not have to guess that it is right; you do not say, "I guess it is filled, I guess it will last." If a man uses oxychloride, or any plastic material which cannot be subjected to accurate measurement, the principle is exactly the same as with chloropercha, and the result will be equally uncertain. When you are dealing with solid materials that have to occupy a certain space, then you can tell scientifically just where your filling is; but if you handle plastic materials, you will never be able to positively state that you know the filling has gone to the apex, because it cannot be accurately measured and its situation ascertained. Have you any direct measurement by which you can ascertain whether the oxychloride you place in a root canal has gotten to the end of it? No, you have not.

Gentlemen, I have gone over this ground carefully, and I have tried to emphasize minutely every point. I want to leave ample time for discussion. Turn over what I have said and pull it to pieces, because whenever the truth is brought in contact with error it likes the contest; but when a thing is doubtful it prefers a shadowy atmosphere.

Discussion.

Dr. B. F. Luckey: Mr. President, it has been a great pleasure to me to listen to Dr. Shields. When he started out I expected fully to receive some new light upon the subject that would be of interest and value to us, but I do not see that there has been anything new presented to us. He has not told us of a single thing that has not been told us time and again by different men. The measurement of a root, which he lays so much stress upon, is many years old; every man in this room, probably, has heard Dr. Atkinson say the same thing time and time again, except that he did not use a piece of rubber dam on an instrument; otherwise it was the same thing exactly. Filling the roots of teeth with gold is as old as dentistry; and as to using small instruments to introduce the gold, he could not get it there with anything else. I have listened to the gentleman carefully, and I can indorse about all that he says, but I feel a little disappointed that I have not gotten some new points. The one thing that looks to me a little overdrawn is his statement about getting absolutely to the end of the roots of those very much twisted molars. I have seen many teeth with roots wound around themselves in such a way, and standing at such acute angles, that to my mind it has seemed, and does seem now, absolutely impossible to get any instrument into them. The doctor says it is feasible and practicable, but the only way to test the thing is to do it out of the mouth and then cut the tooth open, or to do it in the mouth and then extract the tooth and cut it open, and that is not allowable. I do not think it possible, even with these Donaldson instruments, which are the acme of all pulp canal instruments. The Donaldson instruments, like all other attenuated instruments, will occasionally break. Their temper is not always reliable. Some of the little No. 5 instruments can be used for a long time, and will seem almost unbreakable; while another one, taken from the same package, will break on the slightest catch in the root, and the point will be torn away; and if the point be broken off beyond a slight turn in the root, it is next to impossible, if not absolutely impossible, to get the point of that instrument out; and if the point be left in there, with a considerable amount of pulp tissue beyond it, it does not take a prophet to bring to your mind what the probable result will be. The practice of filling the apices of roots with gold has been tried for many years, and by the majority of the profession, if we may rely upon their writings in the journals, has been abandoned for what has appeared to them to be a better mode of procedure, the use of chloropercha. In cases where the opening at the apex of the roots is large, gold is thoroughly inadmissible. In those cases nothing has presented itself which seems to be so reliable and easily tolerated by nature as chloropercha; and the same system of measurement can be used as with gold.

Dr. William H. Trueman: I have listened with a great deal of attention to the doctor's remarks. I look at the matter of root filling a little bit differently. We have our theories, but we all, I think, admit that the more carefully we remove the pulp from the pulp canals, and the more carefully we fill the canal, the safer that tooth is. I think we are a unit upon that. But we remember that the teeth we work upon are sometimes not only inconvenient to get at, but are situated in very sensitive mouths, and sometimes our ambition is slightly limited by our ability to work under the circumstances in which we are compelled to work.

I agree with the doctor that, with the peculiar manipulative skill which he has developed, and which, probably, we all might display if we were to try, and having patients who could stand the strain, he is able to accomplish all that he has said. I agree with him that it should be accomplished, but there are a great many cases where we cannot do it, through no fault of ours, but on account of the condition of the patients for whom we work. Is it always absolutely necessary to take out the pulp and cleanse the roots before filling? Is a tooth that is not properly and perfectly cleansed before filling always bound to give trouble? I think not. For twenty years and more I practiced filling roots with cotton, saturated with creosote, in all those cases. During the last five or six years I have not done that so much—I have used gutta-percha more; but I am free to say that the change in method has not produced any very great change in the results. In treating the pulp cavities of devitalized teeth, whether it is done perfectly or imperfectly, we can never say that the devitalized tooth is safe, that it will never give trouble.

We are always limited when working upon a living being. We have an ideal, and the best we can do is to get as near to it as circumstances will permit.

I would not for one moment say a single word that would tend to lower the standard of practice; but we must remember that we are human, therefore limited by the physical condition of the patients in our hands, who sometimes cannot bear long and severe operations. Sometimes, we have to stop short of the best we can do, or might do under different circumstances where we have a fair chance.

Dr. F. C. Barlow: I should suppose that gold ought to be packed at the apex of the root so solidly that it would prevent the absorption of moisture. I would like to know whether it could be packed sufficiently hard with a small Donaldson nerve extractor. It seems to me that an instrument of that light texture could not pack the gold in the root sufficiently solid to prevent the penetration of moisture.

Dr. Sanger: I listened to an interesting talk by the same gentleman, sometime ago, before the First District Society of New York, and having been convinced by him that I had fallen short of my duty as a dentist, I went home determined to enter every canal with a Donaldson cleanser, and I failed. I have tried very honestly and thoroughly to enter some canals to the apex, without being able to do it. And I say without blushing that I was unable to do it. I do not believe any living man would be able to do it, and know when he was at the end of the root without going through and doing damage. We might take a drill and make a hole, and then, when the instrument passed through to the sensitive tissue, declare we had reached the apex. I believe pulp canals exist that you cannot get through, and I believe that when canals are so constructed that it is impossible to enter them you may feel safe, after having thoroughly dried out the roots with hot air and sealed them up, without any filling at all at the apex. You can send your patient away, and be assured that that canal is as good as the best-filled canal in your practice.

THE CRACKING OF TEETH IN SOLDERING.

BY L. P. HASKELL, D.D.S., CHICAGO.

In the last number of the *Review*, in an article on "Setting Bridges," the remark is made by Dr. McCandless that those who say they do not crack teeth in soldering "do not know whether the teeth are cracked or not," that "they are often cracked and do not show." I have been soldering teeth for nearly fifty years, and think I "know a good thing when I see it," and especially whether a tooth is cracked or not. A crack can *always* be seen when it is *dry*, but often while moisture is in it does not appear.

He asserts that it is impossible to solder teeth in crown and bridge work without cracking more or less teeth. I reply that there is no need of teeth cracking in soldering, and furthermore that no special care is needed to prevent it.

Many of the students at our school, coming from the dental colleges, tell me that there they have much trouble from this cause, and wish to know how to prevent it. They, however, go on with their work, soldering partial sets of gum teeth, crowns and bridges; some of them having no cracks and others but few, and this too in the early use of the blowpipe.

In my own experience, and taking no pains to avoid it, I do not remember the time when I ever had a tooth crack.

Perhaps a few suggestions may not be amiss. If dentists would consider that "cross" pin teeth are more apt to crack than the perpendicular or "straight" pin teeth, they would use fewer of them. They are not only more liable to crack in soldering, but are not as strong for wear. This fact is so apparent that it has been a great wonder to me that at the dental depots, when inquiring for "straight" pins and wondering there were so few, I am told that "the dentists all ask for the 'cross pins.'" Use less of them, gentlemen, and you will have fewer cracks in soldering and less breakage in wear.

Do not rivet your pins, as the solder flows only upon the head of the pin; split the pin, and if the hole is larger than the pin, so much the better, for the solder flows down inside and holds the stronger.

Never heat up the case until the borax and solder have been applied. Heat up over the large burner, slowly at first, and then turning on the full head; take about one-half hour. The heat should (in case of a plate) be thrown by a blowpipe upon the plate first, so that it may be as hot as the backings, as they will heat up as a matter of course from their exposed position. Then throw the heat directly upon the solder. If necessary to apply more solder, do so; but not more borax, as there is danger of thus cracking the teeth.

Many dentists experience much difficulty in soldering by using the miserable little jewelers' blowpipes, which are not at all suitable for dentists' use, there not being a sufficient volume of flame, and the mouth aperture being so small that it has to be taken inside the lips, thereby causing the muscles to become tired. To remedy this I induced the dental goods manufacturers to make a larger blowpipe—the mouthpiece to be pressed against the lips—which makes soldering much easier.

Another difficulty is found in not having a suitable soldering burner. Formerly I would place fine binding wire over the end of the gas pipe so as to break the force of the gas jet. But I am now using a burner made for the purpose, which some have called the "Haskell burner." Many use the automatic blowpipe, but I have found that beginners succeed better with the mouth blowpipe, and for my own use far prefer it.—*Review.*

TO PROPERLY ARTICULATE A SET OF TEETH.

BY J. G. TEMPLETON, D.D.S., PITTSBURG, PA.

Having to make a full upper set of teeth, we will suppose the impression and model to have been made in the usual way. Take modeling composition, soften and flatten it out until it is about a quarter of an inch thick; press it on the model while warm, and then cut and trim to make a trial plate for the purpose of taking a bite. It should accurately fit the model. Melt a little wax around on the ridge, then press a roll of softened wax on that, and trim to what you think would be a sufficient length, then try in the mouth and carefully trim the lower edge to the proper length for the teeth; if it is not, either add to or cut away until it is found by trying in the mouth that the wax represents the proper length. This wax should be so cut on its articulating surface that all the lower natural teeth will strike it at the same time when tried in the mouth. Now remove and soften the articulating wax surface just a little over the flame, then replace in the mouth, and do not let patient bite into it until you have the head drawn well back so as to put the anterior muscles of the neck on a stretch; then have the patient bite a little on the wax just to get an impression of the cusps and cutting-edges of all the lower teeth. Next take an accurate impression of the lower teeth, from which to make a plaster model, which will fit into the slight impressions of the teeth made in the bite taken, and then place the whole on any good articulator which can be set to maintain the relative positions. Remove the bite, and you are ready to set the teeth to a correct articulation; and if all has been carefully done, the teeth will come together properly without any subsequent grinding.

For a double set (upper and lower) make trial plates of modeling composition to take the bite on, putting a piece of rather stiff wire in the lower one to stiffen it. Wax the ridges as previously prescribed. Place a roll of softened wax on the upper trial plate, place the lower trial plate in the mouth, being careful to see that it is in its proper place, and hold it there while putting in the upper plate with the wax on it. Do not allow the patient to bite until the head is drawn back as far as you can get it; then tell the patient to bite, and keep the jaws closed until with one finger the wax has been well pressed on to the trial plates. Mark the center or median line on the wax. Have patient close the lips, and then take a small, straight instrument and mark on the wax the height of the lower lip. This mark should extend from one angle of the mouth to the other; you then have the line of fissure or line of lip-closure—in other words, the height of the lower lip and length of the upper—to serve as a guide in making the wax models. After thus taking the bite, place each of the models in the bite so obtained, and fasten in any good articulator; then prepare corresponding wax models, which should be tried in the mouth to verify their correctness. They should come together in the mouth the same as on the articulator, and if they do not they should be made to do so before proceeding further. Take pains to be satisfied that the wax models are correctly adjusted and give a natural expression to all the facial features, observing that the lower third of the wax model is in proper proportion or length with the upper two-thirds, and be sure to produce the proper fullness over the region of the upper cuspids to give as near as possible the natural contour. Then take the upper and lower plaster models off the metal articulator, and make a plaster extension to the back part of the upper model, on which place the wax models, which have been marked while in the mouth so that they can be put in the same position out of the mouth. The lower plaster model is placed in position, and a plaster extension added to fit to that of the upper plaster model. After separating these, the lower wax model is placed on the lower plaster model, and the inside space filled with wet paper, and plaster is poured over all to make the lower articulating plate to which the lower teeth are to be set. Next place the upper model in position, and set the upper teeth to the lower ones; which have just been set to the lower articulating plate, and when ready for flasking, if for vulcanite plates, saw off articulating ends. Always set the lower teeth first.

Having made double sets in this way for twenty-five years without having to do any grinding after placing them in the mouth, I think that I have some claim to the conclusion that this method is a pretty good one.

Dr. F. Jay Raymond writes to tell me that he has used my method with unvarying success, employing also gutta-percha base plates instead of the modeling composition. He uses a rubber dam to keep the mixed plaster from the bench when forming the plaster articulator extensions.—*Dental Cosmos.*

INJURIOUS EFFECTS OF AMALGAM FILLINGS. *

BY CHARLES H. TAFT, A.B., D.M.D., CHICAGO.

I HAVE heard men in our profession deny with the greatest positiveness, without attempting to offer any reason for their assertion, that there can never be any possible injurious effect or influence produced upon the system by amalgam fillings.

Such men I believe in all sincerity are entirely unaware that mercury is one of the most poisonous of drugs and one of the most difficult to eliminate from a system which has once been susceptible to its toxic effects. There is surely no other drug, poison, or disease, not even syphilis itself in its worst form, that becomes a more difficult matter for the physician to eradicate from the system. Being one of the most deep-seated and deep-acting drugs, its physiological effects often come under our observation within the field of our own special work.

The least we can do in getting at the truth of the point at issue between the two professions is, first, to study the action of the drug both as to its physiological and medicinal properties; second, to study carefully the dual action of drugs in general; third, to study the laws which govern such action; fourth, the proving of potentized drugs upon one's self with a view to becoming satisfied whether or not there is that dynamic action in them and possessing actual curative properties which all who have faithfully studied them know they actually possess; and, fifth, the bearing of these laws upon the question we are considering.

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* Abstract from a paper on this subject read before the Harvard Odontological Society, September, 1893.

When I assure you that such has been my endeavor the past year that I might be able to speak without prejudice in writing a paper upon this subject, you will readily understand that I come before you not for the purpose of stirring up personal controversies and seeking besides the disruption of societies, as it was argued I would do had my paper been granted a hearing before the Massachusetts Dental Society, but rather from an earnest desire to contribute my share of whatever may be of help or interest to any man in our profession.

It may be asked, Why are not the cement fillings equally injurious, considering their composition?

I reply that there is, in both cement and gold fillings, the same kind of dynamic force, but that it is not of such a poisonous character, nor does it act in either case as such a powerful obstruction to the action of indicated remedies as is unquestionably true of mercury.

I may say right here that I have one patient who is so susceptible to aurum that whenever a new gold filling is inserted in any of her teeth an ulcer invariably appears within twenty-four hours upon the mucous membrane immediately about the tooth and upon the tip of the tongue from the constant touching of the tongue against the filling, the taste of the metal being as plainly evident to the patient as is that of the copper in a copper amalgam filling to patients peculiarly susceptible to cuprum. A glance at the homœopathic materia medica will reveal the ulcerations I have alluded to under the symptoms obtained from provings of aurum.

Among my patients are many sent to me suffering from chronic diseases and complaints of various kinds, with instructions from the physician to remove all amalgam fillings. The skepticism of a large majority of such patients, supplemented by that of their families and friends, that a removal of the fillings would result in any visible improvement in the patient's health has been generally equal to what my own want of faith until recently was, that there was either truth or sense in the statement made by physicians, and I am frank to admit that no person who was familiar with the patient's condition before the fillings were removed, and by a subsequent following of the case, to notice the effect, if any, of such removal, could be more amazed than I have been at the improvement which has invariably followed.

Did time permit, I should be glad to speak in detail of many cases where the action of the physician's medicines subsequent to the removal of amalgams was all that he knew it was capable of doing and should do in sending his patient on to a speedy improvement in health.

These cases are all a matter of record, and if any one thinks that I am making statements that cannot be fully substantiated, I shall be happy to give him the names of such patients, to whom he can personally write for all the information he desires.

Therefore, if my statements appear to any one at all dogmatic, let it be remembered that I have made them fearlessly, and with the hope that all who take exception to them will remember that they have not only had the same opportunity to verify them that I have had, but it is their duty to do so.

The opposition to amalgam fillings, gentlemen, is one that has come to stay. Let no one deceive himself on this point or try to laugh it away, for it is by no manner of means confined to "a few physicians practicing in Boston," as a former President of the Massachusetts Dental Society declared so positively at the twenty-seventh annual meeting of that society. A little investigation would have shown him that it covers a territory extending from Maine to California, and from Texas to the extreme north of Canada, while a visit to the shores across the Atlantic would have shown to him the same unyielding opposition.

It will not be understood from what I have said that I believe amalgam fillings in every case offer any obstacle to the physician in the treatment of disease, and consequently have any evil effect upon the system, for it is only when a person whose teeth are filled with amalgam is peculiarly susceptible to mercury that medicines will not have their proper curative effect; but the fact that a person may be susceptible to-morrow if not to-day should make us recognize the duty of abandoning absolutely the use of amalgam so far as it is possible to do so.

Speaking upon the subject we are considering, the statement was made by a member of the Massachusetts Dental Society at the twenty-seventh annual meeting that he did not wish to be compelled to ask, when treating a patient's teeth, "Who is your medical adviser?" and to act on the doctor's judgment instead of his own. Would it not be well when a patient is sent to us with instructions from the physician to remove all amalgam fillings from the teeth of his patient to courteously comply with the request, at the same time taking pains to follow the case after it has left our hands and note whether there is any improvement or not? If there is, it will at least set an honest man to thinking, and prompt him to follow a line of study similar to the one I have suggested. If there is no improvement, then he can at least have the satisfaction of going to the physician with a request for the reasons why his medicines then fail to do what he claimed they would in restoring health to his patients.

Health is one of the dearest things of life, and no one sufficiently prizes its value until he has been deprived of it. Among my patients are those who have not known for years what a return of it meant to them until it gradually began to be restored to them after I had conscientiously and painstakingly removed every particle of amalgam from their teeth, with as earnest a desire to prove that physicians were either wholly right or wholly wrong as to do what lay in my power in helping to bring to the patient what he was most in search of.

Therefore I feel that so long as we as dentists are content to stand aside and obstinately ridicule and contradict statements made by physicians eminent not only for their skill in successfully combating disease, but for their scholarly and scientific attainments as well, before we have patiently investigated the matter for ourselves and obtained some positive knowledge, so long shall we be in a humor to discuss the question before us without profit to ourselves and without the desire even of acquiring any new scientific truth.

One fact or principle evolved by both inductive and deductive processes of reasoning, and plainly demonstrated by actual experiment so that there is no way of getting around its acceptance, is worth a thousand idle or thoughtless assertions from you or me which prove nothing, having nothing but an individual opinion back of them on which to rest.

Due regard for your patience in listening to my paper will permit me to allude to but one of the most interesting cases I have ever followed, where some twenty or more amalgams were removed from the teeth of a patient who had been almost an invalid, suffering from a complication of troubles for many years, and whose testimony is but that which has been expressed to me by other patients, often in much stronger terms and supplemented by the severest condemnation of amalgam fillings.

Upon my request recently that he give me a brief statement of his case he writes as follows: "Until four years ago I had been all my life under allopathic treatment, taking large quantities of medicine and being, I have no doubt, much of the time drug sick. For nearly four years I have been under homœopathic treatment, and while for the first two years I experienced great relief, much greater than ever before in my life, still the improvement was not so great or so lasting as my physician wished, and at his request I came, as you know, to you to have all my amalgams removed. Although the suffering was great, I can truly say I am glad it was done, as my health has improved much faster since then, and I have every reason to believe it is because I am free from the injurious dynamic influence of the mercury contained in the amalgams. I have now better health than I have had for years, and it is rapidly improving."

And now let me say in conclusion, that if my paper stirs any thoughtful mind to make a careful and conscientious investigation of this matter before indulging in sweeping assertions and slurs upon our friends of the medical profession for the sturdy maintenance of convictions which are born of experience and founded upon well-established laws, the time you have given to its hearing will have been neither unwisely nor unprofitably spent.—*International.*

SYPHILIS.*

BY CHARLES M. WHITNEY, M.D.

I WISH to call your attention to certain peculiarities of syphilis which are found in the mouth. The lesions in this region are second in importance to none in the whole body. Among the earliest to appear, the most obstinate and rebellious to treatment, and most apt to recur, of any of the symptoms, they are, in the early stages at least, the most contagious. There can be no doubt that more cases of extragenital syphilis are acquired from them than from any local lesions elsewhere upon the body. It is fact which gives to syphilis its chief interest to the dental profession and constitutes its chief danger. Patients who are perfectly aware of the danger from the primary lesion are ignorant of the risk of oral contamination, and spread the disease among the innocent.

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* Extracts from a paper on "History and Clinical Appearance of Syphilis," read before Harvard Odontological Society, January 25, 1894.

Syphilis as seen in the mouth and throat presents five forms: the primary lesion; erythema—that is, a localized congestion or redness; the mucous patch; gummata; ulcerations, superficial and deep, and their resulting cicactrices.

The primary lesion, most frequent upon the lower lip, may be found anywhere in this region, even as far back as the tonsil. It varies in appearance with its situation, being often a grayish ulcerated surface, again a hard, painless bunch, its usual form upon the lip. The erythema or congestion occurs at the same time as the secondary rash, and consists in a diffuse redness of the posterior parts of the mouth, chiefly on the soft palate and uvula, often having a butterfly arrangement, usually sharply defined from apparently normal mucous membrane at the junction of the hard and soft palate.

We occasionally see, however, many small red areas scattered over the roof of the mouth and on the cheeks, corresponding to the blotches upon the skin. This form lasts but a short time, either completely disappearing or changing to the third and most important form of oral syphilis—the mucous patch, as it is termed. In number these patches may be one or many, and consist in whitish spots of varying size and shape, closely resembling the ordinary "canker spots" so often seen. Their usual situation is upon the inside of the lips and cheeks, upon the gums and tongue, especially when it comes in contact with the sharp edge of a tooth. When these patches exist in the corner of the mouth very troublesome cracks may result. They are somewhat sensitive to both heat and cold. Appearing first eight to twelve weeks after the primary sore, they are the most important of any of the lesions in this region.

Again and again when the disease is supposed to be under control, and when no symptoms exist elsewhere upon the body, these mucous patches appear. Present alike in early and late syphilis, they are a constant source of danger. They are extremely contagious, and infect the saliva, so that it too may convey the disease.

Any local irritation favors an outbreak of these. They may change by a process of degeneration to superficial ulcerations.

Gummata are not frequent, but when present are found in the soft and hard palate and tongue especially. Their chief importance is in their terribly destructive action. Frequently in a few hours ulceration may occur, and a perforation or destruction of the palate result. The cicatrices resulting from these lesions have a very important diagnostic value.

From the foregoing description it will be seen that while these manifestations are often perfectly clear and distinctive of syphilis, it not infrequently happens that only a few scattered patches are present which bear a close resemblance to the common and harmless "canker spots." Being obviously, in most cases at least, unable to closely question the patient, how shall the dentist determine from physical signs alone one variety from another? From the appearance of the local lesion itself it is often quite impossible to determine this, but, bearing in mind these general physical signs, he should look carefully for them. Those accessible to ordinary inspection are: Eruptions of various sorts; glandular enlargements, especially behind the ears and at the back of the neck; thinning of the hair, and especially of the eyebrows, with or without the presence of scabs in this location; and cracks or scars at the corners of the mouth and on the tongue. If any or all of these be present, it would afford strong presumptive evidence of the syphilitic nature of these patches. If these symptoms are all absent, he cannot hastily conclude that the affection is of an innocent nature.

The question naturally arises as to when these lesions cease to have contagious properties. It is the generally accepted opinion among syphilographers that late tertiary lesions are not contagious, some placing the time limit at three years after the primary sore, others at five. Although this may doubtless be true, yet no careful person would venture to expose himself even at a later period. The safe view to take is that any lesion occurring in the mouth at any period may be contagious, and to take precautions accordingly. In addition to these various lesions, the blood from a syphilitic patient possesses markedly contagious properties, a fact to be kept in mind in extracting teeth, and in other similar operative procedures.

From these various sources danger presents itself to the dentist in two ways. By contact of the saliva or secretion from these lesions upon an abraded spot in his hand a chancre may result, or by the deposition of the virus upon the various instruments inoculation of other patients may occur.

The subject of extragenital transmission of syphilis has received considerable attention of late years, and literature abounds in instances of it.

Dr. L. Duncan Bulkley, of New York, the foremost authority in this country upon the subject, has carefully and laboriously collected the evidence, and in his book, "Syphilis in the Innocent," shortly to appear, has presented a startling array of facts. He has also presented such facts as are of interest to the dental profession in a paper read before the New York Odontological Society, and published in the *International Dental Journal* for August and September, 1890.

It is to this, which should be read by every dentist, that I am indebted for many of the facts which I shall presently lay before you. The thought may very naturally occur to one unfamiliar with the subject, that if the method of infection is so common, why is it that we so rarely see it? why is it so uncommon to hear of an instance of it among dentists? The most reasonable explanation of this is to be found in the very natural diffidence which every individual who is the subject of syphilis, acquired innocently or otherwise, has to informing the community of the fact. It is to answer such criticism as this that I desire to lay before you the evidence that we possess on this subject—the plain facts rather than any theories.

Dr. Bulkley has compiled a table of 9,058 cases of extragenital chancre, showing the locality in which they were situated.* Of these cases, the affection existed in the mouth and throat in 1,504 cases, divided as follows: In the buccal cavity, 734 cases; upon the tonsils, 307; in the throat, 264; upon the tongue, 157; upon the gums, 42. Of the remaining cases, there are 3,249 which may reasonably be attributed, from their location, to infection from mouth lesions. These are divided as follows: Upon the lip, 1810; the breast (from suckling infants), 1,148; the chin, 146; the cheek, 145. This makes a total of 4,753, nearly fifty per cent. of all the recorded cases, which may have been produced by some form of oral syphilis. Besides these there are 462 cases where it existed upon the fingers and hand. These are facts collected from the practice of clinical observers who are competent judges of the nature of this disease.

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*"System of Genito-Urinary Diseases. Syphilography, etc." Morrow, Vol. II., p. 69.

Inasmuch as these recorded cases are but a small proportion of those which have occurred, who shall say that the danger is not worthy of careful consideration? Especially is this true in those branches of medicine which involve operative procedures about the mouth and throat.

Syphilis may be contracted from these various lesions, then, in two ways: by direct contact or by contact with any article upon which the virus has been deposited. Of the first form instances are extremely common; surgeons and obstetricians have received the primary lesion upon the finger, and have in turn inoculated others before the nature of the trouble was recognized. Bites and tooth wounds have also contributed their share, very many being reported.

A case which illustrates this method in a most vivid manner came under my observation two years ago. A young man of twenty-eight, strong and healthy, by occupation a bartender, in endeavoring to forcibly eject a man who was "fighting drunk," struck him a blow upon the mouth and teeth, slightly wounding in so doing the knuckle of the middle finger of the right hand. The abrasion caused him no great inconvenience for about three weeks, when it became more tender and increased in size until an ulcerated surface the size of a ten cent piece resulted. This refused to heal, in spite of vigorous treatment, and upon the occurrence of a perfectly typical rash the diagnosis was established. At this time he first came under my observation. He was put under treatment; the original lesion quickly healed, but a few mucous patches remained. He was cautioned regarding his domestic relations, and these directions were obeyed, except that he continued to kiss his wife on leaving and returning home. About three months later his wife came to the office with a chancre upon the lower lip and the evidences of constitutional syphilis.

From the original case another person was infected at the same time. In attempting to aid the first patient in ejecting this drunken syphilitic, a young man of thirty years was bitten upon the fingers, and he too developed a digital chancre and its resulting constitutional symptoms.

Another method of direct infection from lesions in the region under consideration is that of kissing. As seen by the cases already cited, the resulting chancre may be upon the lips or any part of the face, or the virus may be conveyed by the food or saliva to the deeper parts, the tongue or tonsil.

They are by no means uncommon. I have seen six or seven of them, and other observers many more. The reported instances in which dentists have been infected in operating are by no means many, but the general impression among those paying special attention to the subject is that it is rather common. Bumstead states that he has known of several cases. Taylor makes a similar assertion. Dr. Bulkley reports four cases, one a personal experience reported by the dentist himself; another by Neunet, where infection occurred from the scratch of a tooth; another by Otis, which illustrates a peculiar method. A dentist received a chancre of the lip, caused by holding an instrument in his mouth while operating upon a patient who had a few mucous patches. The fourth, by Hutchinson, caused by a tooth scratch. Besides those reported by Bulkley, Morrow gives a plate in his atlas showing a chancre upon the finger of a dentist. These recorded cases, and the strong presumption that many others have occurred, clearly show that care should be used.

Of instances of indirect contagion literature abounds. Any article which can possibly be brought in contact with a syphilitic lesion has produced the disease. There is apparently no end to the curious and interesting methods.

In 1577 an epidemic occurred at Brünn, by which one hundred and eighty people were inoculated by a cupping glass in use at the bath. An ear specialist in Paris inoculated sixty people with a Eustachian catheter.

Pipes, musical instruments, forks, knives, spoons, children's toys, such as trumpets and whistles, feeding bottles, tooth brushes, pencils—in short, any article which can be transferred from mouth to mouth has carried the disease. An instance is on record of three workmen who were inoculated by biting pieces of thread from a ball which had been used in a like manner by a fourth, who was syphilitic. Public drinking glasses, glass blowing, coins, tacks and nails used in common by upholsterers and shoemakers, have all added to the cases. Tooth transplantation has resulted in the development of a chancre.

Hundreds of interesting examples are found of indirect means, the mere mention of which would more than occupy the time allotted for this paper.

Of instances of inoculation from dental operations, Dr. Bulkley has recorded fifteen, the details of which may be found in his paper.

Such facts show most distinctly and clearly the care which should be taken in cleaning all instruments. The instruments and appliances used by the dental profession should receive the most painstaking attention.

Metallic instruments may be safe by boiling for half an hour in a 1 to 100 soda solution (a tablespoonful of washing soda to a quart of water). Others may be made tolerably safe by immersion in 1 to 10 creolin or pure carbolic acid. Mouth mirrors seem to me particularly dangerous, and in a recognized case of syphilis a separate mirror should always be used. Towels and the like should be well boiled. In a word, surgical cleanliness will avoid the danger of indirect transmission of this disease.

Careful inspection of the fingers should not be neglected by the dentist, and any abrasion, particularly about the nail, should be brushed over with contractile collodion. In fresh tooth wounds instant washing and the application of 1 to 500 sublimate solution or 1 to 10 carbolic solution should be restored to. By these various means comparative immunity may be had from this insidious disease and its far-reaching effects prevented.

In conclusion, I desire to express my thanks to this society for the privilege of presenting this paper, and for the opportunity of reviewing such facts as science has clearly established in relation to this subject. It is only by concerted action on the part of the medical profession that a great danger to the public health can be lessened. It is not possible to fully accomplish this until public sentiment is aroused to the fact that this disease is not alone one occurring among the immoral and unclean, to be discussed under the breath, but that it exists bodily in our midst among all classes and conditions, threatening health and even life itself in the ordinary business and social relations.

When medical men, aided by other learned professions, shall have the courage to describe the disease as it is, its frequency and its dangers, we may expect an irresistible public demand for measures which shall limit its spread in the community. Until this is done the innocent must suffer with the guilty, and the yet unborn will pay the penalty for parent's ignorance. If this paper shall have served to recall to your minds these facts, its object will be fully accomplished.—*International Dental Journal.*

MR. TOMES'S INAUGURAL ADDRESS.

The following extract from the presidential address of Mr. Tomes, at the annual meeting of the British Dental Association, in Newcastle, will be read with interest:

"We have all of us made acquaintance with the self-styled practical man in all grades of society, from the artisan who poisons us with the sewer gas to the politician whose horizon is bounded by the limits of his personal observation, and that none too accurate. Let us quote to you the words of one of the clearest thinkers of our day, Professor Huxley, who thus delivered himself upon the proper scope of education: 'I often wish that this phrase, applied science, had never been invented, for it suggests that there is a sort of scientific knowledge of direct practical use, which can be studied apart from another sort of scientific knowledge, which is of no practical utility and which is termed pure science. But there is no greater fallacy than this. What people call applied science is nothing but the application of pure science to particular classes of problems. It consists of deductions from those general principles, established by reasoning and observation, which constitute pure science. No one can safely make these deductions until he has a firm grasp of the principles, and he can obtain that grasp only by personal experience of the operations of observation and of reasoning on which they are founded. Almost all the processes employed in the arts and the manufactures fall within the range either of physics or of chemistry. In order to improve them one must thoroughly understand them, and no one has a chance of really understanding them unless he has obtained that mastery of principles and that habit of dealing with facts which is given by long-continued and well-directed purely scientific training in the laboratory.'

"I will not weaken these pregnant words by comment, save only to say that every word which I have quoted is applicable to the training of the dentist, but as yet we are far behind such an ideal as is there propounded. That scientific habit of mind by which we observe correctly and draw conclusions legitimately is essential, but it is fortunately one which can, to a great extent at all events, be cultivated. But do not suppose that I would allow this wider mental culture to at all take the place of that patient acquisition of manipulative and, I may say, empirical skill. To once more quote Professor Huxley: 'Indeed, I am so narrow-minded myself that if I had to choose between two physicians, one who did not know whether a whale is a fish or not, and could not tell gentian from ginger, but did understand the application of the institutes of medicine to his art, while the other, like Talleyrand's doctor, "knew a little of everything, even a little physic," with all my love for breadth of culture, I should assuredly consult the latter.'

"But in real life we are not called upon to make this choice; the man who is greedy of learning in his own special line is rarely—I may say, never—content to be ill informed outside it. But supposing our young aspirant to start fully equipped with such knowledge as the schools can give him, his success is not yet fully assured, and there are certain qualities, like all qualities capable of improvement by cultivation, which will serve him in good stead. He must have nerve; not perhaps the nerve of the surgeon in whose hands lie the issues of life and death, but a certain steadiness of nerve which will enable him in the face of his special difficulties to be fully master of all the skill which he possesses, and this will go far toward securing the confidence of his patients. He must be painstaking, for it is in attention to *minutiæ* that, just as in modern surgery, the difference between success and failure lies. He must be patient, too, in dealing with all the little obstacles which crop up. And he must have tact and a quick judgment of the idiosyncrasies of his patient, which he must be both quick to appreciate and, within proper limits, to bend to. For the very nature of our work precludes the possibility of the patient being able to judge even of results, except by the test of time, far less of what is best to be done for him, so that the dentist has ample opportunity for the exercise of all his discretion in knowing when to give way to his patient and when to fight out his little battle in the patient's own interest. And it is very desirable that he should cultivate a thoroughly kind and friendly feeling toward those who honor him with their confidence. I say cultivate because I believe that such a habit of mind is strengthened by use, and that it is just as easy to entertain a friendly feeling toward those to whom we are able to render service, as it lies deep down in imperfect human nature to dislike those whom we have in any way injured. He must have a good physique; his work is hour after hour exhausting in a degree that no one who has not tried it can appreciate. With busy practice comes another difficulty, and that is to avoid being hurried, and to keep for each patient time enough to do him justice. There is no temptation for the busy dentist to spend one moment more than is absolutely necessary over his work; on the contrary, there is a very strong temptation in the other direction, as it becomes very difficult to satisfy all those who wish to be seen, and who do not realize that dental operations take so long that it is rarely possible for the dentist, as it sometimes may be for the medical man, to squeeze in another patient when his appointment book is full; so that a good deal of moral firmness is needed every day to keep the dentist out of this pitfall. And he has all the more need of these qualities in that his patient can never know the extent of the difficulties of his work—difficulties that are great enough, though the work be small —and will often be inclined to rate as high or higher the practitioner who attempts nothing difficult, but pilots their teeth toward a gradual and painless euthanasia, as he who renders far more real service, but in attempting much more now and again fails in something that the other would never have attempted.

"It may be said that these qualities which I have sketched would have led to success in any calling. So I believe they would; and I fancy it is generally true that the man who scores a real success in any calling would have done so in a good many others had his career been a different one.

"One more word before I leave this matter of professional success. By success I do not mean merely pecuniary success. I do not call it real success unless a man stands in the opinion of his own professional brethren at least as high or higher than he does with the public. It is unfortunately the case that in all branches of the medical profession, and very especially in ours, the ear of the public is sometimes to be caught by self-assertion and the many hydra-headed forms of quackery."—*Dominion Dental Journal.*

Extracts. . . . .

"TECHNIC SCHOOLS."

John Scott Russell thus defines technical education:

"What I call technical education is that kind of training which will make the new generation of Englishmen excel the new generation of foreigners in this coming rivalry of race and nation. The English live in the midst of an energetic rivalry of competing nations. The aim of our national life should be to do the work of the world better, more ably, more honestly, more skillfully, and less wastefully than the skilled men of other countries. If we are less skilled or less honest than others, we are beaten in the race of life. To the national welfare and success it is therefore necessary that the young race of men who are to do the work of England shall in their own special profession, occupation, trade, or calling know more thoroughly its fundamental principles, wield more adroitly its special weapons, be able to apply more skillfully its refined artifices and to achieve more quickly, perfectly, and economically the aims of their life, whether it be commerce, manufactures, public works, agriculture, navigation, or architecture."

The same remarks are true as applied to the United States; for the Atlantic Ocean has ceased to be, to any important extent, a wall of defense against foreign competition in the refined industries, those which give wealth to the worker and diversification of industries to the nation. Our school and college curricula have hitherto been—and are still—vastly too exclusively literary to meet the needs of the people and the country. We have made hardly a beginning in the building of that great system of industrial training, supplementing education, which must, if we are to survive in the industrial rivalry of nations, soon be made to constitute an important and extensive division of the State and of the national educational structure.—*Extract from an article in the Scientific American, by Robert H. Thurston, in Items of Interest.*

AN ORIGINAL CROWN.

For the crown described by Dr. Crossland, the root is prepared as usual for an ordinary porcelain crown. With a very fine drill, preferably one with a gauge, a series of holes is drilled as near as practicable to the circumference of the root and the interspaces cut out, forming a groove in the face of the abutment. A band 28 or 30 gauge, 24-karat gold is fitted into this groove and ground off to the base of the root. To the band is soldered a flat cap of pure gold, 34 gauge, using as little solder as possible, 20 karat. This is replaced in position and burnished to the face of the root. It is then punched and a platinum post placed in position, secured with hard wax inverted and soldered, the cap being trimmed accurately to the outlines of the root end. A plate tooth is then backed with gold as follows: The tooth is ground at the gingival end to fit the cap and beveled from pins to cutting edge. From 34 gage 24 karat gold a backing is cut slightly longer than the tooth which is punched, placed in position in the tooth, and held by bending the pins. The gold is burnished thoroughly to the tooth and slightly over the square end or bevel of cutting edge.

Another backing is cut, long enough to burnish over the articulating edge to thicken the gold at this point, in which a number of holes are punched to insure perfect union in soldering.

All the parts being placed in position, it is carefully waxed up and invested as usual for soldering.

Dr. Crossland claims for this crown that it is less bulky and more shapely than the old ferule crown; exposes no gold at the gum margin; allows a much more favorable and accurate adjustment with regard to other teeth; can be used when convergent and divergent roots are to serve as abutments for bridges; is especially adapted to conically shaped roots; causes less pain in adjustment, and will not irritate the pericemental membrane. It is extremely cleanly, as the joint between gold and tooth can be made about perfect. The band and cap may be made of platinum and a porcelain backing baked, producing a highly esthetic crown.—*Dr. J. H. Crossland, Montgomery, from Items of Interest.*

"THE ONLY ONE."

Mr. Charles Tomes, in his inaugural address, whilch will be found upon another page, makes some apt remarks upon the "self-styled practical man" in dentistry. While recognizing the importance, and in one sense the preëminence, of manipulative skill, it is clear that without knowledge of the scientific principles the purely "practical man" is an empirical "surgeon" dentist.

Many of our readers have no doubt frequently been amused with the absurd claims put forth by some of these purely practical men. Any editor can testify to the fact that it is by no means uncommon to receive as original discoveries ideas which are perhaps a century old. In every city there are some practitioners who have learned what they know entirely outside of colleges, journals, or books, and who have the temerity to tell their patients the most absurd yarns as to their practice. Recently a very well-educated party told us that a certain dentist claimed to be the only one in his city who filled the roots of teeth; the only one who made the "proper bridge work" (which, by the way, was made entirely by a mechanical assistant); the only one who made contour gold fillings; the only one who treated abscessed teeth; the only one who was "not a mere theorist." At the same time, when the naked truth was told, he was the only one who had never had any other training than what he received with an obscure third-class dentist; the only one who had never listened to a medical or dental lecture—the only one, in short, who is mean enough to make capital for himself by deliberate falsehood and impertinent presumption, and just as long as the public will swallow the statements of these advertising liars "the only one" will always get public support, even if he gets professional contempt.—*Editorial in Dominion Dental Journal.*

THE LATE PROFESSOR BILLROTH.

Professor Billroth, whose death occurred February 7, in the sixty-fifth year of his age, united all the qualities which go to make the highest type of the modern surgeon. As an operator he was bold, skillful, quick to devise, ready to execute, and cool in emergencies. Yet the success which attended his operations was not based alone upon his manual dexterity, but upon his immense clinical experience, his thorough knowledge of pathology, and the progressive spirit which marked his work. In his well-known treatise on surgical pathology, which has been translated into almost every language of the civilized world, and in the numerous contributions to surgical literature which have emanated from his pen, he exhibited the variety and extent of his scientific attainments. In 1881 he performed the first successful extirpation of the cancerous pylorus, and among the other operations which have made him one of the foremost surgeons of his time are resection of the esophagus and extirpation of the larynx. As professor of surgery in the University of Vienna, Billroth commanded, in a remarkable degree, the respect and affection of his pupils, and the magic of his name attracted students from all parts of the world to this school. But, aside from his abilities as a surgeon and teacher, Billroth was a talented musician, a public-spirited citizen, and a generous host. Through his efforts in the Upper House of the Austrian Diet, of which he was a member, a number of important sanitary reforms were adopted in the army, which earned him the gratitude of every soldier.

Editorial. . . . .

OLD POINT COMFORT.

As Chicago monopolized the attention of those of the profession who attended Dental Associations last year, so Old Point Comfort will this year. The fact that both the Southern and American hold their meetings, the Southern beginning the 2d day and the American the 7th day of August, at this most celebrated of Southern seaside resorts, and the promise of the Virginia dentists composing the Virginia State Association to entertain them jointly in princely style will bring together from all parts of the Union her representative men. Can you afford to miss the occasion? Make your arrangements to be present at this great meeting.

The National Association of Dental Faculties and the National Board of Dental Examiners will hold meetings at the same time. Let every one attend who possibly can.

WEDGING TEETH WITH RUBBER.

THIS is still probably the most common way of obtaining the necessary space for making proximal fillings, and is the means of inflicting a great deal of unnecessary pain. The practice of inserting the rubber to be worn for days, and sometimes weeks, before operating on the teeth is cruel, barbarous, and unscientific. The object is just as thoroughly accomplished in a few hours, when gutta-percha may be pressed tightly between the teeth that have been forced apart, which will retain the separation and allow all peridental disturbance to heal.

Our practice for years has been to have the patient adjust the rubber early in the morning and report to us at 5 o'clock in the afternoon for the gutta-percha substitute. The thickness of the rubber supplied the patients was determined by the space required. The gutta-percha is worn for ten days or two weeks, when it is found that all soreness has entirely disappeared. The gutta-percha serves the double purpose of retaining the space and pressing away the gum from cavities which extend well down toward the cervical margins. The cavities are partially prepared, the dam applied, and a separator adjusted to hold the teeth firm during the introduction of the fillings. We know of no more satisfactory means of separating temporarily, and none less free from pain or danger.

FACULTY CHANGES.

In the Medical Departments of the University of Nashville and Vanderbilt University we note the fact that Dr. Charles S. Briggs has been elected to fill the chair of Surgery, made vacant by the death of his father, Prof. W. T. Briggs, who had held the chair for the past twenty-five years. Dr. S. S. Crockett has been elected to the chair of Anatomy. Years of teaching qualify these gentlemen to discharge most satisfactorily their respective duties.

Prof. Ambrose Morrison has been elected to fill the chair of Physiology. Dr. Morrison has filled the chair of Anatomy and Physiology in the Department of Dentistry of Vanderbilt University for the past fifteen years, and is an acknowledged superior teacher and lecturer. This recognition of his ability is deserved and will be learned with pleasure by his host of friends in both the medical and dental professions.

Changes in the Faculty of the Department of Dentistry, Vanderbilt University.

Dr. Larkin Smith, lecturer on Histology and Pathology in the Medical Department, has been chosen Adjunct Professor of Oral Surgery, Histology, and Pathology, to succeed Prof. Orville H. Menees, who resigned on account of continued ill health. Dr. Smith is a gentleman of rare attainments, and having had several years laboratory experience is eminently qualified for the position.

Dr. Clifton R. Atchison has been elected Assistant to the chair of Materia Medica and Therapeutics, and Dr. J. M. Bass, Jr., succeeds Dr. Atchison as Demonstrator of Anatomy. These gentlemen are eminently fitted to fill the positions for which they have been chosen.

We are pleased to announce the names of Drs. J. Y. Crawford and L. G. Noel as Professors in the Dental Department of the University of Tennessee. Dr. Crawford is to fill the chair of Dental Pathology and Clinical Dentistry, Dr. Noel on Dental Hygiene. These gentlemen are well known and need no introduction. We congratulate the university upon its selection.

We print in this issue an advanced editorial of Dr. W. C. Barrett on the semicentennial of the discovery of anæsthesia. Dentistry has an acknowledged claim to the priority of discovery of this greatest boon to suffering humanity, and it is right and proper that the fiftieth year of its use should be celebrated by the profession in such manner as to write the names of those dentists who gave to surgery nitrous oxide and sulphuric ether on the heart of every one who loves his fellow-man.

It is proposed to formulate plans for such an undertaking at Old Point, and let every one interested go prepared to contribute to the laudable cause.

MATRICULATES AND GRADUATES OF DENTAL COLLEGES

For Session of 1893–94.

	Matriculates.	Graduates.
1. Chicago College of Dental Surgery	360	58
2. Philadelphia Dental College	299	77
3. New York Dental College	294	62
4. Pennsylvania College of Dental Surgery	273	62
5. American College of Dental Surgery	248	43
6. University of Pennsylvania	231	65
7. University of Michigan	185	63
8. Boston Dental College	152	33
9. Ohio College of Dental Surgery	151	34
10. University of Iowa, Dental Department	148	31
11. Baltimore College of Dental Surgery	146	37
12. University of Maryland, Department of Dentistry	145	34
13. Vanderbilt University, Department of Dentistry	129	25
14. Western Dental College	126	26
15. Atlanta Dental College	118	26
16. Kansas City Dental College	113	16
17. Indiana Dental College	104	23
18. Royal College of Dental Surgeons of Ontario	98	22
19. Northwestern University Dental School	95	25
20. Missouri Dental College	94	21
21. Louisville College of Dentistry	90	9
22. University of Buffalo, Dental Department	88	6
23. Harvard University, Dental Department	63	14
24. Detroit College of Medicine, Dental Department	38	1
25. Southern Medical College, Dental Department	31	4
26. Western Reserve University, Dental Department	30	4
27. National University, Dental Department	28	8
28. Columbian University, Dental Department	28	8
29. Birmingham Dental College	27	3
30. Ohio Medical University (Columbus), Dept. of Dentistry	23	2
31. University of Denver, Dental Department	18	3
32. Cincinnati College of Dental Surgery	18	5
33. Meharry Medical College, Dental Department	10	3
34. University of California, Department of Dentistry	6	18
35. Cleveland University, Dental Department	...	4

SEMICENTENNIAL OF THE DISCOVERY OF ANÆSTHESIA.*

THE year 1844 gave to surgery one of the greatest boons ever conferred upon suffering humanity. The discovery of anæsthesia marked a distinct era, and the credit of it, by universal consent, belongs to dentistry. As in the case of all other great discoveries, a number have claimed to originate it, but the consensus of opinion has awarded to the dentist, Horace Wells, of Hartford, Conn., the honor of first demonstrating it, and his name is enrolled among those highest in the temple of fame as being one of the greatest benefactors of any age. This is the semicentennial year of its discovery, and dentistry should not miss the opportunity of reminding the world of the debt which it owes to a member of the young profession. Dentists themselves use anæsthetic agents largely in their practice, and they would be recreant to duty and prove themselves but ingrates if they did not in some way mark the occasion by a fitting observance of the anniversary.

The Odontological Society of Pennsylvania took action early in the year, by appointing a committee to take the matter into consideration. The Dental Society of the State of New York, at its annual meeting early in May, appointed a committee to take action upon the part of the dentists of the State. The Connecticut State Dental Society, at its annual meeting, passed resolutions which will be found on another page of this number, and appointed a committee to arrange a semicentennial celebration, and other societies will doubtless take similar action.

But the subject is too great and too comprehensive in interest to be monopolized by any single body of men. Every dentist throughout the world is concerned in the matter, and should have an opportunity in some way to assist in celebrating an event that must be to him a matter of personal pride. But the time is limited, and whatever is to be done must be done quickly. Half the year has flown without any general organization having been effected, and unless immediate action be taken the most momentous event in our professional history will not receive the attention which its importance demands.

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*Advance editorial in July number of the *Buffalo Dental Practitioner and Advertiser*. As Chairman of the committee of the New York Dental Society, Dr. W. C. Barrett will be glad to receive communications from other like committees.—ED.

In this emergency we take the liberty to suggest that every dental society in the land, as far as possible, appoint delegates to meet at Old Point Comfort at the time of the annual session of the American and the Southern Dental Associations, there to agree upon some concerted plan of action. It is no time for any elements of personality to enter into the consideration of the matter, or for any claims of priority in conception to be urged. Let us as one man unite in honoring ourselves and our profession, by doing honor to the memory of the man who did so much to honor us. We sincerely hope that there will be a unanimity of feeling among us, and that every dental society, especially every State organization, will, through its proper officers, appoint a committee to meet at Old Point Comfort, Va., in August next. We commend the subject to our brother editors of dental journals.

MARRIED.

Dr. Edwin Garland Grant to Mary Padgett Carpenter at Columbia, Tenn., April 26, 1894.

Dr. Julian C. Wasson to Miss Lenita Crow at San José, Cal., May 23, 1894.

DEATH ROLL.

Eams.—At St. Louis, Mo., March 29, William H. Eams, M.D., D.D.S., in his sixty-sixth year. An honorable dentist, able and beloved teacher, benevolent Christian, and tender and affectionate husband and father.

Rawls.—At Lexington, Ky., April 22, A. O. Rawls, D.D.S., in the fifty-third year of his age. "A talented and exemplary member of the profession, a valued citizen, a friend faithful and true, a devoted husband and father."

Briggs.—At his residence in Nashville, Tenn., June 13, William T. Briggs, M.D., in the sixty-fifth year of his age. A distinguished physician, surgeon, and teacher, kind-hearted and indulgent husband and father.

Associations.

To the Editors of the Dental Headlight.

At the twentieth annual meeting of the Mississippi State Dental Association, held in Natchez May 1, 2, and 3, 1894, the charter obtained for that body by the committee appointed at the last annual meeting having been granted in the name of the "Mississippi Dental Association" (the word "State" having been inadvertently omitted), it became necessary to dissolve the old Association and to reorganize under the new name. This was accordingly done, the charter being accepted, a revised Constitution and By-laws adopted, and the following officers elected: Dr. W. E. Walker, Pass Christian, President; Dr. F. H. Smith, Water Valley, Vice President; Dr. T. C. West, Natchez, Secretary; Dr. C. C. Crowder, Kosciusko, Treasurer.

The Association adjourned to meet in Jackson, Wednesday after the first Tuesday in April, 1895.

The State Board of Dental Examiners having resigned in a body, the Governor of the State appointed a new Board, which organized May 15, as follows: Dr. D. B. McHenry, Grenada, President; Dr. L. G. Nisbit, Aberdeen, Secretary; Dr. J. B. Askew, Vicksburg; Dr. Dr. E. E. Spinks, Meridian; Dr. C. W. Robinson, Magnolia.

To the Editors of the Dental Headlight.

Will you please give notice in the Dental Headlight that there has been a new Dental Examining Board appointed in this State. I make this request for the benefit of those desiring business with the Board of Examiners.

The new Board are the following-named dentists: Dr. D. B. McHenry, Grenada, President; Dr. L. G. Nisbit, Aberdeen, Secretary; Dr. E. E. Spinks, Meridian; Dr. J. B. Askew, Vicksburg; Dr. C. W. Robinson, Magnolia.

Respectfully, L. G. Nisbit.

Aberdeen, Miss., June 19, 1894.

ILLINOIS STATE DENTAL SOCIETY.

To the Editors of the Dental Headlight.

At the thirteenth annual meeting of the Illinois State Dental Society, held at Springfield May 8 to 11, 1894, the following officers were elected for the ensuing year: J. W. Cormany, Mt. Carroll, President; S. F. Duncan, Joliet, Vice President; Louis Ottofy, Chicago, Secretary; W. A. Stevens, Chicago, Treasurer; Grafton Monroe, Springfield, Librarian.

The next meeting will be held at Galesburg May 14 to 17, 1895.

Louis Ottofy, *Secretary.*

Chicago, May 21, 1894.

AMERICAN DENTAL ASSOCIATION.

To the Editors of the Dental Headlight.

The thirty-fourth annual session of the American Dental Association will be held at Old Point Comfort, commencing at 10 A.M. Tuesday, August 7, 1894. Geo. H. Cushing, *Recording Secretary.*

Chicago, June 11, 1894.

SOUTHERN DENTAL ASSOCIATION.

Decatur, Ala., June 1, 1894.

The twenty-fifth annual meeting of the Southern Dental Association will convene at Old Point Comfort, Va., August 2–6, 1894.

Every effort within the power of the official members of the society has been exerted to make this one of the most instructive meetings in the history of the Association.

We desire to impress the fact that it is the duty of every member of the society to lend his influence to the interest and success of the meeting by being present, and all reputable practitioners are most cordially invited to meet with us.

Hotel Rates.

Hygeia, $2.50 per day. Sherwood, $2 per day; or, if fifty or more stop there, $1.75 per day.

Railroad Rates.

All roads within the Southern Passenger Association give one and one-third fare for round trip. Procure a certificate from your local station agent when purchasing ticket, which will be signed by the Secretary of the Association before you start for home.

Programme.

The meeting will be called to order by the President at 11 A.M. Thursday, August 2.

Prayer.

Address of Welcome on behalf of the Virginia State Dental Association by Dr. W. W. H. Thackston, of Farmville, Va.

Response by Dr. B. Holly Smith, of Baltimore, President of the Southern Dental Association.

There has been arranged a complete and interesting programme for the entire session.

The forenoons of the 3d and 4th of August will be devoted entirely to clinics. It is arranged to have the greatest series of clinics ever given. The committee will be on hand a few days previous to date of meeting to perfect every arrangement for clinic material and to fully demonstrate all the most modern appliances and improved methods.

OFFICERS OF THE ASSOCIATION.

President, Dr. B. Holly Smith, Baltimore, Md.; First Vice President, Dr. R. K. Luckie, Holly Springs, Miss.; Second Vice President, Dr. S. B. Cook, Chattanooga, Tenn.; Third Vice President, Dr. L. P. Dotterer, Charleston, S. C.; Treasurer, Dr. H. E. Beach, Clarksville, Tenn.; Corresponding Secretary, Dr. D. R. Stubblefield, Nashville, Tenn.; Recording Secretary, Dr. S. W. Foster, Decatur, Ala.

Executive Committee.—Dr. B. A. Muckenfuss, Charleston, S. C. (one year); Dr. V. E. Turner, Raleigh, N. C. (one year); Dr. W. H. Richards, Knoxville, Tenn. (two years); Dr. E. B. Marshall, Rome, Ga. (two years); Dr. W. R. Clifton, Waco, Tex. (three years); Dr. Gordon White, Nashville, Tenn. (three years).

Committee on Literature and Voluntary Essays.—Dr. H. B. Noble, Chairman, 1324 New York Avenue, Washington, D. C.; Dr. A. W. Harlan, Chicago, Ill.; Dr. C. S. Stockton, Newark, N. J.; Dr. L. G. Noel, Nashville, Tenn.; Dr. J. B. Patrick, Charleston, S. C.: Dr. G. J. Fredericks, New Orleans, La.; Dr. T. B. Legare, Columbia, S. C.

Committee on Prosthetic Dentistry.—Dr. John S. Thompson, Chairman, Whitehall Street, Atlanta, Ga.; Dr. D. C. Atkinson, Brunswick, Ga.; Dr. S. P. Sharp, Knoxville, Tenn.; Dr. G. S. Staples, Sherman, Tex.; Dr. T. P. Hinman, Atlanta, Ga.; Dr. J. H. Crawford, Raleigh, N. C.; Dr. B. G. Quattlebaum, Columbia, S. C.

Committee on Histology and Microscopy.—Dr. J. S. Taft, Chairman, 122 West Seventh Street, Cincinnati, O.; Dr. W. T. Arrington, Memphis, Tenn.; Dr. Lewis Augspath, Little Rock, Ark.; Dr. J. H. Harris, Baltimore, Md.; Dr. H. A. Lorance, Athens, Ga.; Dr. L. D. Shepard, Boston, Mass.; Dr. T. W. Harris, Littleton, N. C.

Committee on Chemistry.—Dr. W. J. Barton, Chairman, 209 North

Wall Street, Paris, Tex.; Dr. W. D. Billmeyer, Chattanooga, Tenn.; Dr. E. F. Adair, Harmony Grove, Ga.; Dr. W. T. Arrington, Jr., Memphis, Tenn.; Dr. James Johnston, Staunton, Va.; Dr. J. C. Storey, Dallas, Tex.; Dr. R. C. Young, Anniston, Ala.

Committee on Operative Dentistry.—Dr. H. W. Morgan, Chairman, 211 North High Street, Nashville, Tenn.; Dr. George Eubank, Birmingham, Ala.; Dr. Frank Holland, Atlanta, Ga.; Dr. J. Rollo Knapp, New Orleans, La.; Dr. James Chase, Ocala, Fla.; Dr. M. C. Marshall, Little Rock, Ark.; Dr. R. D. Griffis, Paris, Tex.

Committee on Appliances and Improvements.—Dr. C. Sill, Chairman, 301 West Twelfth Street, New York; Dr. W. T. Pool, Columbus, Ga.; Dr. B. H. Teague, Aiken, S. C.; Dr. O. H. McDonald, Griffin, Ga.; Dr. B. S. Byrnes, Memphis, Tenn.; Dr. B. Rutledge, Florence, S. C.; Dr. W. B. Finney, Baltimore, Md.; Dr. H. C. Herring, Concord, N. C.

Committee on Pathology and Therapeutics.—Dr. A. P. Johnson, Chairman, Anderson, S. C.; Dr. W. N. Morrison, St. Louis, Mo.; Dr. W. J. Morrison, Nashville, Tenn.; Dr. G. F. S. Wright, Georgetown, S. C.; Dr. L. D. Carpenter, Atlanta, Ga.; Dr. J. H. Durham, Wilmington, N. C.; Dr. Morgan Adams, Sardis, Miss.

Committee on Dental Hygiene.—Dr. W. E. Walker, Chairman, Bay St. Louis, Miss.; Dr. T. C. West, Natchez, Miss.; Dr. J. T. Calvert, Spartanburg, S. C.; Dr. A. J. Friedrichs, New Orleans, La.; Dr. R. R. Freeman, Nashville, Tenn.; Dr. E. C. Kirk, Philadelphia, Pa.; Dr. Francis Peabody, Louisville, Ky.

Committee on Dental Education.—Dr. S. P. Hilliard, Chairman, Rocky Mount, N. C.; Dr. C. L. Alexander, Charlotte, N. C.; Dr. H. S. Colding, Savannah, Ga.; Dr. H. A. Parr, New York; Dr. E. Wagner, Montgomery, Ala.; Dr. E. L. Hunter, Enfield, N. C.; Dr. R. B. Winder, Baltimore, Md.

Committee on Arrangements.—Dr. E. P. Beadles, Chairman, 338 Main Street, Danville, Va.; Dr. W. W. H. Thackston, Farmville, Va.; Dr. J. Hall Moore, Richmond, Va.; Dr. V. E. Turner, Raleigh, N. C.

Committee on Publication.—Dr. S. W. Foster, Chairman, Decatur, Ala.; Dr. B. H. Catching, Atlanta, Ga.; Dr. D. R. Stubblefield, Nashville, Tenn.

Committee on Clinics.—Dr. J. Y. Crawford, Chairman, 219½ North

Summer Street, Nashville, Tenn.; Dr. E. S. Chisholm, Secretary, St. Louis, Mo.

Local Committee.—Dr. T. H. Parramore, Chairman, Hampden, Va.; Dr. W. A. Gingrich, Norfolk, Va.; Dr. W. E. Norris, Norfolk, Va.; Dr. J. R. Woodley, Norfolk, Va.

Remember that the hour for the meeting is 11 A.M., August 2, and it will convene promptly. Let everybody be on hand, with a full supply of new thoughts, ready to make the meeting a grand success.

B. HOLLY SMITH, *President;*
S. W. FOSTER, *Secretary.*

AMERICAN DENTAL ASSOCIATON.

J. D. Patterson, Kansas City, President; J. Y. Crawford, Nashville, Tenn., First Vice President; S. C. G. Watkins, Mont Clair, N. J., Second Vice President; Fred A. Levy, Orange, N. J., Corresponding Secretary; George H. Cushing, Chicago, Recording Secretary; A. H. Fuller, St. Louis, Treasurer; W. W. Walker and S. G. Perry, New York; and D. N. McQuillen, Philadelphia, Members of the Executive Committee. Next meeting to be held at Old Point Comfort, Va., the first Tuesday in August, 1894.

SOUTHERN DENTAL ASSOCIATION.

B. Holly Smith, Baltimore, President; R. K. Luckie, Holly Springs, Miss., First Vice President; S. B. Cook, Chattanooga, Second Vice President; L. P. Dotterer, Charleston, S. C., Third Vice President; D. R. Stubblefield, Nashville, Tenn., Corresponding Secretary; S. W. Foster, Decatur, Ala., Recording Secretary; H. E. Beach, Clarksville, Tenn., Treasurer; W. R. Clifton, Waco, Tex., and Gordon White, Nashville, Tenn., Members of the Executive Committee. Next place of meeting, Old Point Comfort, Va., August 2, 1894.

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DENTAL HEADLIGHT.

VOL. 15. NASHVILLE, TENN., OCTOBER, 1894. No. 4.

Original Communications.

CLEANLINESS.*

U. D. BILMYER, D.D.S., CHATTANOOGA.

How many of us in our daily routine of work, in one of the most trying vocations, pay sufficient regard and devote sufficient time to the all-important matter of cleanliness in connection with the operations we are constantly performing? Do we as a rule sterilize ourselves, our instruments, our materials, or perform our operations under proper sanitary surroundings? It may seem like a reflection on our profession to even hint that a doctor—the title we all possess and according to the dictionaries defined to be a teacher, an instructor, a learned man, one skilled in a learned profession—should not possess all the elements of culture and refinement that his title would indicate. If cleanliness is akin to godliness, then it is also necessary to success in the practice of the profession of dentistry. Are we looked upon as possessing these qualities by our patients and the public generally? Here is an estimation of our ability and skill said to be taken from an editorial in one of the most prominent medical journals: "The dentists of America are the best in the world, but they are far behind the mark. We appreciate their ingenuity, their skill, their drills, their dams, their composite fillings, and artificial teeth; they make the best kind of gold crowns, but do not deserve to wear them; this is because they do not sterilize themselves or teach their patients how to prevent caries. They are wonderful patchers up of things half gone, but do not know how to prevent the going. There is hardly a dentist (there are a few) who works in an aseptic way or uses aseptic instruments. Some do not know better, some do not think it necessary; but both are wrong, the one class should learn,. the other should think. How many dentists can tell surely when they are dealing with a syphilitic mouth? Yet if such a mouth is being treated we do not believe that any one would like to be the next patient, though the dentist should wash his hands." Here is an opinion of us from the medical profession, flattering in some respects, depreciating in others. It is certainly true that we have become very proficient as patchers up of things half gone, and I believe the only scientific manner of preventing the going will be through some process whereby our patients may use their own treatment, under the instruction and assistance that we as a profession should be able to give them. If we can devise a method or treatment by which our patients can keep their mouths, and the secretions contained therein, in a purely sanative condition, and keep their teeth perfectly clean, we will have accomplished much toward preventing the breaking down of the structure of the teeth. We can surely accomplish much in this direction by teaching our patients the importance of cleanliness.

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*Address as President of the East Tennessee Dental Association, delivered at a public meeting, September, 1894.

If we can get the simple fact that clean teeth will not decay sufficiently inculcated in their minds that they may become aroused to the extreme importance of preserving their teeth in order that they may be made to properly perform their functions, and by so doing help to at least put a check on the inroads of nearly every form of disease that this frail body is heir to, we will then have accomplished much, and have done more good than is possible for us to do by waiting until the teeth have decayed, and then displaying such wonderful skill and ingenuity in restoring them that they may be made useful members again. Prevention is better than cure; but if we cannot and do not have an opportunity to prevent, we *must* cure, and we do not expect in this generation to entirely prevent the decay of the teeth by prophylactic means. It is a matter of education that will take long to accomplish, but we can do much in our everyday practice by dropping a hint here and saying a word there, and we all know too well how many operations we perform that are seemingly failures, simply because our patients do not do their duty in the matter. We should impress upon the minds of our patients the importance of cleanliness, and especially should we instruct the mothers that the importance of washing and cleaning the teeth of their children is paramount to the care of the hands, face, or any part of the body. How often mothers who take the very best care of their own teeth bring their children to us with their little mouths fairly reeking with filth and disease, contaminating the poorly masticated food given them, and then wondering why their children are so delicate, the thought never entering their minds that the mouth and teeth require attention as well as any other part of the body in order to promote health and vigor and prevent the inroads of disease. We are not (all of us) educating our patients in the right direction. I believe I am safe in making the assertion that nine-tenths of the people clean their teeth with the sole idea of making them look nice, never thinking of the matter from a sanitary point of view. We must endeavor to imprint upon the minds of our patients that the mouth should be kept in a sanitary condition, and that this can only be done by thoroughly cleansing every tooth not only in front but on every part and point where there is a chance for the lodgment of food. To clean them that they might be beautiful is very good, but the beauty is only on the outer side of the arch.

Instruct our patients to care for them in order to prevent decay and disease, and I believe they will succeed much better. I have tried to do a little missionary work on this line, and in some respects the results have been wonderful indeed. However, in some cases the patients have been very much offended that I should even hint that they did not properly brush their teeth. A few cases in actual practice will illustrate:

A lady, educated and refined, her teeth hypersensitive whenever decayed or abraded, had a soft, cheesy deposit about them that the brush and water would have removed, with secretions very much vitiated as a consequence. Her husband told me, in a friendly way, that his wife was very indignant because I had intimated that she ought to be a little more painstaking in cleaning her teeth. He said that she devoted much time in caring for her teeth.

A good old lady cleaned her teeth every day, but when questioned how she did it admitted that she never thought of brushing them on the inner side next to the tongue.

The ingenuity displayed in caring for the teeth is many times remarkable. One case will serve to illustrate what patients will resort to when they become intensely interested in the subject:

A mother with two children, all of whose teeth were like pearls, told me that she saved the ashes from the cigars her husband smoked, and whenever she discovered a stained place on their teeth she could always remove it with the cigar ashes. So we have patients we cannot instruct without fear of offending: those who do not care only so the six front teeth look well, and those who seek eagerly any means possible to assist them in caring for their teeth.

Now let us turn our attention to ourselves. Do we sterilize ourselves? Do we work in an aseptic way? Do we use aseptic instruments? I am a firm believer in the virtues of soap and water, and with our finger nails well manicured and a newly laundried operating coat I think we are pretty well fitted for the operations we are to perform. I consider it not necessary to dwell on this point long; for if there is any one thing I am proud of in my profession, it is the clean, highly cultivated, intelligent personal make-up of its members. Our offices: are they well ventilated, well kept in every way, neat and clean, with plenty of light and sunshine? Are the office smells well under control? The odor that may arise from the cuspidor, various medicines in use, the vulcanizer, requires our most careful attention. Our patients, upon entering our offices, should not be made conscious, through the very delicate membrane of the olfactories, that they are in close proximity to an apothecary shop or guano factory; neither should they be conscious of the fact that we have been trying to neutralize the bad odors of our office by means of the sprays from the atomizer. How much better to give our patients a whiff of the pure, fresh air of heaven; keep our medicines out of the way, except when in actual use, and if possible our laboratories should be in a separate room; and if we must have something pleasing to the sense of smell, let it be a bouquet of flowers on our center table! Our offices should be neat, clean, and attractive like the parlors in our homes. Do we work with aseptic instruments? Here is a matter of very great importance. The little vaccine point is a white, clean-looking piece of ivory—nothing remarkable about it that the eye could detect. But simply producing a slight irritation with this point will, in a short time, produce symptoms with which we are all so familiar. This is infection, transmitted from the delicate little point. How many delicate little points are in the operating outfit of the dental surgeon! and how many times are these points infected with the germs from the diseased members upon which they have been made to do duty! and the same fine-pointed instrument can produce very serious trouble if in their infected state they are allowed to come in contact with the capillary circulation of the body. This is not only theory, but actual facts, and the victim is more often the operator than the patient. The many cases of serious trouble from this source should ever serve to keep us on our guard, and perform our every operation under as thoroughly aseptic conditions as is possible. It is not the intention in this paper to discuss the modes of disinfecting our offices and instruments, but to endeavor to present only for your consideration the importance of cleanliness in connection with our daily practice. A fellow-student, when I was in college, was showing me his brother's extracting forceps, and he was mortified and I very much shocked to find blood on the beaks of several of them. I shall never forget that as long as I live, it made such an impression upon me. I am sorry to say that some dentists will work with filthy napkins or towels, instruments, and hands; and when they discharge their patient take another in the operating chair, and operate with their instruments in the same filthy state, the same soiled towels, and not even washing their hands. A patient tells this on a dentist: He would step into an adjoining room, turn on the water from the hydrant, let it run a moment, and then return to operate, conveying the impression that he washed his hands many times; but upon watching him found that he would not touch the water with his hands. Now that fellow appeared to be clean, and endeavored to impress the fact upon his patient. He certainly appreciated the importance, but probably had some objection to the use of soap and water. The rubber dam should receive special attention. While I believe a rubber can be cleaned perfectly so that the same can be used many times, I would not advise using the same rubber for different people. I believe we get sufficient compensation from our patients to afford to be a little extravagant in the use of rubber dams. It is not much trouble to write the name of a patient on a slip of paper, pin it on the rubber, and lay it away until a return for another sitting, and then we will not be obliged to smuggle out a rubber full of holes, and get it over the tooth without the patient seeing it; but openly and proudly hold up your rubber, see that the name of the patient and that pinned on the rubber corresponds, punch the holes, and apply the rubber. Your patient will feel complimented, and will appreciate it I am sure, and I am also convinced that the average patient will observe these things, and the time spent in attending to the many little details of this nature is time well spent, and for which we will receive ample compensation in the end. Let us look after our surroundings and observe the laws of health, and when the sunset of life is ours we will have the extreme pleasure and satisfaction that we have done our work well, that we have been weighed in the balance of professional skill and found *not* wanting, and as we glide down the shady pathway we will receive blessings of our friends who were our patients in former days. Let us keep our hands clean and heart clear, and to our friends here I will say: Keep your teeth clean and your tongues clean, and you will avoid many of the imaginary horrors of the dentist's chair.

DENTAL EDUCATION.*

BY J. Y. CRAWFORD, M.D., D.D.S., NASHVILLE, TENN.

THIS many-sided subject has received much attention at the hands of our best writers. Hence the difficulty of our task is at once apparent, and we will not attempt anything like an elaborate discussion at this time. That our system of instruction, and the rules governing the same, is in many respects deficient is indicated by the large number of men entering the profession who are so illy prepared to assume the grave responsibilities devolving upon practitioners of dental surgery at this stage of our civilization. Perhaps we would do well to designate the various factors in the dental educational system of our country. We will attempt to mention them in the order in which they come.

1. The dental colleges or dental departments of universities or medical colleges.
2. The National, State, and Local Dental Associations of this country.
3. Our periodical literature.
4. The National and State Boards of Dental Examiners.
5. The National Association of Dental College Faculties, composed of representatives from the various reputable dental colleges in the United States and Canada.
6. Standard text-books, which are not as efficient as they ought to be by any means.

Of all these various forces, none perhaps have done so much as our noble institutions of learning. Since this system of instruction has been in existence, a little over fifty years, the first move being made in this direction in the city of Baltimore, Md., in 1839, in the organization of the old Baltimore College of Dental Surgery, under the leadership of the distinguished Chapin A. Harris. Any discussion of dental education without mentioning his name would be a violent discourtesy. He not only led in the idea of dental college education, but he led in the organization of regular formulated text-book instruction in this country. His "Principles and Practice of Dental Surgery" has stood the attacks of time, and will go down to posterity, and be used by generations yet unborn.

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* Delivered at a public meeting before the East Tennessee Dental Association, September 1, 1894.

I feel safe in saying that in no other department of learning have the schools done so well in so short a time, with the comparative meager support they have had. Only two suggestions I would risk in making to the dental colleges at this time: 1. A better preliminary education should be demanded before the student is allowed to enter college. 2. A higher and more thorough qualification in the fundamental branches of medicine and surgery should be insisted upon.

That the rank and file of the profession needs broadening in these two directions is apparent to the careful observer. I must be permitted to heartily commend the American system of uniting the didactic and clinical modes of teaching, as I am satisfied the highest possible results can be obtained in this manner. To supplement this system of didactic and clinical teaching with the operative and laboratory technic of some of our best schools in theory seems to provide the very best possible system for attainments in the wide field of dental surgery.

That the standard or manner of conducting examinations in our schools is not quite all it should be is indicated and emphasized by the small number of applicants who fail to graduate when they apply. Perhaps less than three per cent. fail who ask for diplomas in all departments of medicine and surgery in this country. In calling attention to this fact, it is not done by way of severe censure or criticism, but with the hope of provoking and teaching the importance of the manner of conducting college examinations. The ludicrous spectacle is so often witnessed in the case of college graduates being denied registration in States where all applicants for registration are forced to undergo an examination, whether they have a diploma or not.

While the demands of the National and State Boards have been in the nature of extremes in some instances, good has and will be accomplished by these Boards. The moral force resulting from the passage of a statutory enactment in the various States has done more than any one single item of influence toward the improvement of young men who have entered our profession within the last few years. After a careful study of the question, I am fully convinced that the only power State Boards should have over dental colleges or dental departments regularly organized under the laws of the various States in the Union should be the determination of the question of their regularity and reputability. When a college or dental department is adjudged as reputable by a State Board, with such power well defined in the law creating the Board, I am of the opinion that registration should be granted at once without further investigation. And when a dentist has been duly registered in any one State of the Union, and presents to a State Board a duly anthenticated certificate of such registration, he should be admitted to practice without further investigation by any other State Board, provided his moral and professional standing is good. I am fully of the opinion that if the profession in all the States would come to this plan uniformly, and insist upon the enforcement of the laws, it would not be long before we could so amend the statutes in the various States that when a dental surgeon is guilty of gross unprofessional conduct the Boards will soon be given the power to revoke his license and stop him from practice. If the laws of our country can provide for the disbarment of an attorney at law who is guilty of unprofessional conduct, and that such a disbarment is a public necessity, I insist that it is perfectly right to have, and the public demands, protection from the dental mountebank and charlatan as well. To illustrate: If an attorney at law should openly and boldly disregard and violate the rules governing his practice in the administration of justice, as a dentist does that puts his sign over his door that is false and misleading—such, for instance, as the "extraction of teeth without pain for twenty-five cents by the administration of vitalized air," and other like extravagant and false statements—he would not hold his license to practice law in any court in this country ten days. Upon this point I want to say that our dental education in this country needs to be so developed that the reflex influence upon the public will be so great that all such claims and quack advertisements will fail to get business for the advertiser, but have the contrary effect.

In referring to the enlightenment of the public, some good men in our profession have expended much time upon the idea of directly instructing the people as to what is their duty in reference to the care of their teeth. While such instruction is to a great extent beneficial, the most effective work in this line is accomplished by direct personal contact with our patients, and the aggregate moral influences resulting from a higher educated professional membership.

If in this short paper I could so emphasize and impress upon the minds of my profession, and especially the younger portion of it, the great practical utility, and the wonderful amount of progress that has been made in the past, and that is now being made, and the inestimable amount of progress that could be made in the future along the line of dental education from the standpoint of societies or associated effort or by the dental associations of this country, I would be well repaid for the time and trouble I have taken in attempting to prepare it. More enthusiasm and interest, and consequent advancement, is attributable to the influence of dental societies in this country than to any other one influence that occupies no more time than is devoted to them and to their support, and I do hope there will be such an effort made in this country that the good results will be so apparent that, instead of having so small a number to meet in annual session, out of the twenty thousand dentists in our country, we will in the near future have much larger attendance present at every meeting. The most instruction of a scientific and practical character that some men have has been obtained at meetings of this kind. If a personal allusion will be excused, I will say that in what little advancement I have been able to make I am more indebted to this influence than to any other. To show my appreciation of this statement, I wish to say that if I had to suggest one single rule or propound one question of a compound character by which an individual would be able to intelligently determine who to employ as a doctor or a dentist I would let that question be, "Does he attend the associated meetings of his profession regularly, and is he a working member in the same?"

I hope that such a discussion upon the subject of dental education will be had at this meeting as will develop a better appreciation of our periodical literature, and that in this country at least there will be within the next few months a marked increase in the number of subscribers for at least the better class of our dental journals. A dentist can no better be without his periodical literature than the theologian could do without his Bible and commentaries upon the same. A failure to appreciate this source of information is attributable to the unsystematic and irregular way of studying the same. I am sorry to say that the South is more tardy in this direction than perhaps any other feature of dental education.

It is with pleasure that I call attention to the organization of the College Faculty Association, composed of representatives from the various dental colleges of the United States and Canada. This organization was effected in 1884 largely through the instrumentality and as the direct result of the suggestions and labors of the late Prof. Winder, of the old Baltimore College, who was the first, if I am not mistaken, to call attention to the propriety and necessity of such an organization. He met with a ready second in representatives from the Philadelphia Dental Schools and New York Dental College, and other of the older institutions in the country. From their combined efforts there has been effected the building up of one of the most harmonious and effective organizations for the advancement of dental education in this country.

I would pause just here to make this comment: That it is remarkably strange that so much jealousy and antagonism should exist in institutions of learning, and I am glad that this organization of dental faculties has done, is doing, and will accomplish much good in the allaying of these unwarranted prejudices and jealousies. One of the chief objects of this organization is to arrive at a uniform course of instruction in all schools, so that when a student sees fit to go from one school to another he can very readily take up the course of instruction, without detriment to his intellectual progress. And I should here suggest that if I were a dental student at this day and time I would not think of taking all three courses at the same institution, but would study the strong and weak points in the various institutions, so as to be able to accomplish the feat of obtaining the very best instruction that could be furnished, by taking advantage of the change, and to the industrious and energetic student I am satisfied this would be an additional means of advancement, and would enable him to make still higher attainments in the three years that are now allotted to the course.

The members of this Association can be congratulated and heartily thanked by the entire profession for the gallant and noble manner in which they have complied with the urgent demands of the profession in extending their course to three years, and for the efforts of the individual schools for improving their facilities to that extent that we may with safety say that the dental institutions of our country are well on a par with all other institutions of like character. I am one of those that think that the maximum number of courses necessary for proper instruction has been attained. If an additional higher standard were to be required, I should insist that the better way to accomplish this would be to insist upon a higher course of preliminary education, supplemented by a thorough medical course in all the fundamental branches.

The manner in which this organization has seconded the efforts of the National Association of Dental Examiners is indicative of a uniform desire, upon the part of men engaged in teaching dental surgery in this country to do all that is possible to bring up the standard of dental education to such a *status* that the humiliating spectacle of having our diplomas disregarded in foreign countries may ultimately become a thing of the past, something that is certainly very desirable to be accomplished. Particularly is this desirable from the fact that America has the proud distinction of leading the world in dental surgery. It now only remains for her institutions of learning to put themselves upon such a basis that all of their functions would not only be recognized at home, but abroad.

I would most earnestly recommend the encouragement of more extensive reading of our standard works, and particularly would I insist upon a comprehensive review of all the literature of our profession, as there is no means by which we can arrive at so great and comparative understanding of the immense amount of progress that has been made in all departments of dental surgery.

A further reason in favor of this comprehensive course of reading will be indicated in the observance of the strange fact that, while we have been learning as a profession, we have been forgetting in this: that many so-called old and obsolete ideas in practice are as thoroughly correct from a surgical and therapeutic and scientific standpoint as any of the so-called modern improvements. A thorough familiarizing oneself with the text-book literature of our profession would often save the young man the mortification of assuming originality on certain points in practice, when in reality he has only staggered upon an old and possibly obsolete one. Mental exercise and culture of this character for the dentist is doubly important, in that it schools the mind and enlarges it to such an extent that it becomes more readily receptive and can more thoroughly appreciate new advancements. In other words, I would say that dental art and dental science and dental surgery is one of the hardest things to learn that the human intellect has to grapple with, and that we need all of the help and all of the culture and all of the bringing out of the intellectual powers it is possible to attain in order that we may be astute and correct in the solving of the many problems that are presented to us in practice.

Finally, permit me to say that in the liberal maintenance in full force of all the influences to which we refer depends to a great extent our sustenance of the idea that we are a liberal and learned profession, because the literature and scientific work is to a profession what music and art and literature is to a nation. No profession can successfully attain and retain public confidence without a literature which becomes the permanent receptacle of all its truths and attainments. Hence the idea that a thorough classical and literary education is of so much importance as a preparatory step to enter a dental college for the study of dentistry. The truths of the profession that have for their prime object the benefiting of the human family should be enshrined in the most euphonious and indestructible language known to humanity. The same argument in reference to the well-established and recognized facts in dental or medical science could be used in favor of utilizing a dead language from which to take our nomenclature that is advanced by some religious sects in using a dead language for a repository for their truths, since dead languages do not undergo change and are not subject to the laws of mutation and change as living languages. Therefore I am one of those who believe that it would be better for the dental profession to maintain the idea that we are a distinctive and definite branch of the regular medical profession, and only need to add to, in accordance with the laws of philology and language, such terms as will enable us to definitely and correctly express the thoughts and truths that we may want to incorporate in our literature.

Further, I would say I am one of those that do not lay so much stress upon the exact length of time that is consumed in the accomplishment of a dental education, or the special mode by which such an accomplishment is attained, but I do most earnestly insist upon a broader and higher and thoroughly comprehensive course of instruction in all that tends toward a better understanding of the workings of the human organism in health, as well as in all the pathological conditions. It is the amount of information, and not the length of time or the manner of obtaining it. In my candid opinion the most competent authority to pass upon the qualifications of a young man as to his ability to practice dentistry would certainly be the Faculty of a well-organized dental college, dental department in some university, or dental department of some medical college.

Selections. . . . .

FURTHER REMARKS ON PYORRHŒA ALVEOLARIS.*

BY C. N. PEIRCE, D.D.S., PHILADELPHIA.

In two previous communications (one published in the *International Dental Journal* for January, 1894, the other in the *Dental Cosmos* for February, 1894) there are stated with some detail views which I entertain, and which appear to me to be sustained by recent experience, regarding the etiology, pathology, and treatment of pyorrhœa alveolaris.

In these two papers facts and deductions are presented which, if rightly interpreted, it is believed will establish the kinship of pyorrhœa, or, as previously designated, hæmatogenic pericementitis, with the gouty or uric acid diathesis.

The conclusions entertained may be well represented in a condensed form in the following postulates, viz.:

1. The inflammatory stage of true pyorrhœa alveolaris primarily begins in tissues on the side of the root near the apical extremity, and secondarily advances in the very large majority of cases toward the gingival borders.

2. The cause of this inflammation, or gingivitis and pericementitis, is the plasma exudation from the blood vessels freighted with salts, which, in their deposition and crystallization upon the cementum of the root and infiltration of the more vascular tissues, exert the influence of foreign bodies and react as irritants.

3. The salts in question, as disclosed by chemical analysis, are calcium and sodium urates, free uric acid, and calcium phosphate.

4. The chemical nature of these salts indicates a condition of the blood in which there is an excess of uratic salts and uric acid, due to either *increased formation* or *imperfect elimination*. The excess of these salts, as is well known, is regarded by general pathologists as indicative of a faulty nutrition, and is the immediate cause of a series of local disturbances to which the term gouty has been ap-

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* Read before the Odontological Society of Pennsylvania March 10, 1894.

plied, the nutritional disturbance being known as the uric acid diathesis.

5. An attentive study and accurate observation of the various organs and tissues of patients suffering with pyorrhœa alveolaris have disclosed the coexistence, in a very large proportion of them, of one or more local expressions of this constitutional diathesis.

6. Recognition of the fact that a constitutional malady presents itself, one phase of which only has claimed the attention of the dental practitioner, indicates that a treatment designed to be curative must have reference not only to the local expression, but especially to this important systemic condition as well.

7. Results from constitutional treatment in connection with the usual local applications in a number of well-authenticated cases of pyorrhœa have been so markedly satisfactory that the writer feels fully justified in his assumption regarding the origin of the disease·

An objection that might be, and, indeed, has already been, urged to these conclusions is, that while some of the cases of pyorrhœa might be considered as either the local expressions of a constitutional condition or the sequence of a specific poison acting as a predisposing cause, yet a large percentage, it is claimed, cannot be so estimated. *The force of this objection must depend entirely upon what conditions are meant to be represented by the term pyorrhœa alveolaris.*

In a former communication an attempt was made to differentiate two distinct diseases of the pericemental membrane, both of which were caused by the deposition of salts. In this short paper I desire to recognize the fact that we have three distinct conditions, quite easily differentiated, which it appears are not infrequently—indeed, are generally—classed under the same heading, "Pyorrhœa Alveolaris." The *first* may be noted as inflammation and destruction of the gum tissue and the pericemental membrane, with solution of the alveolar process. This is the result of a mechanical irritant, the salivary calculus. This may or may not be accompanied by a flow of pus. If the pus be present, it is dependent upon some constitutional predisposition such as a scorbutic or scrofula habit. *Secondly*, inflammation of the gingival borders with a varying flow of pus, but without the presence of tartar—phagedenic gingivitis and pericementitis—so designated by Dr. Black. This is greatly exalted, if not wholly caused, by some morbid constitutional state, which is also a destructive process. *Thirdly*, alveolo-cemental irritation originating at or near the apical extremity of the root, and due to some morbid composite of the blood exuded with the plasma, a salt or salts, infiltrating this locality of the membrane and *usually* becoming precipitated upon the root of the tooth near the apex. This latter I designate true pyorrhœa alveolaris or hæmatogenic pericementitis. It is accompanied by accumulation and flow of pus, by denudation of a portion or all of the root, by dissolution of the process, by turgescence of the gum, and in certain stages with considerable pain. This inflammatory condition, with its concomitants, being so invariably associated with some recognized manifestation of a gouty diathesis, there appears to be full warrant for stating that it is but another local expression of that systemic condition. Confirmation of this assumption is found in the fact that this accumulation which is so frequently recognized upon the root near its apical extremity, has by analysis been proved to consist of such foreign bodies as sodic urate, calcic urate, and free uric acid crystals. Nor is the presence of these salts the only evidence of the correctness of this theory. Cases which have been locally treated for months—indeed, for years—with only a very limited perceptible improvement, have, when the patient has been subjected to constitutional treatment in addition, responded promptly; the inflammatory conditions, with their progressive concomitants, pus and process absorption, subsiding in a great degree. It is a matter of almost daily occurrence and observation that a chronic latent inflammation of the pericementum may undergo an exacerbation from mechanical or atmospherical causes from the accumulation of the product of decomposition in the tooth, which may be followed by the formation of pus. This form of pericementitis may be of long or short duration, but in most every instance it yields promptly to local treatment. Now, although this inflammation may be attended with a flow of pus and much suffering, it is in no wise a specific inflammation, and frequently occurs in individuals in whom no trace of a gouty tendency could be detected. And when the train of symptoms of such an inflammation are contrasted with those of the disease with which all are familiar, and which is known, or has been known, as Rigg's disease and pyorrhœa alveolaris, there can be no doubt that two distinct conditions are to be diagnosticated and treated. It is conceivable, however, that a local, non-specific, easily controlled pericementitis might, by the deposition of uric acid, become a specific, persisting, and destructive pericementitis. It is then this phase of the disease, whether primary or secondary, to which is applied the term hæmatogenic, and which is to be regarded as a local manifestation of a constitutional condition.

In the remaining moments devoted to this paper an effort will be made to outline a course of treatment based wholly on the supposition that in its etiology and pathology pyorrhœa as above defined is but one of the multiform phases of the uric acid diathesis. This, then, very naturally resolves itself into both local and constitutional treatment, the local directed toward the removal of the deposit and the control or suppression of the inflammation and its concomitants. The method by which this is accomplished has been so frequently described and discussed that further amplification of it in this place seems unnecessary. There is, however, one factor which might be regarded as protective or prophylactic, and, though local, is of considerable moment and deserving of more than a passing notice. I allude to the exercise of care in the avoidance of injuries to the pericemental membrane. Whatever the predisposing cause may be, the immediate or exciting cause must ever be borne in mind. This, it is believed, to a certain extent at least is found in all those mechanical agencies so well known to the dentist, which impair or lower the nutritional level of the pericementum, thus rendering it liable under certain systemic conditions to a deposition of uratic salts. The question has been raised as to why the membrane of one or more teeth widely separated or occupying positions on opposite sides of the mouth either simultaneously or successively become the seat of inflammation when there is no continuity of structure. The answer to this must be found in the fact that impaired nutrition and lowered vitality in such structures are due in the majority of instances to mechanical injury. It is certainly within the experience of many observant dentists that pyorrhœa has not infrequently developed around a tooth after it has been subjected to the necessary mechanical manipulations incident to tooth protection—tooth preservation. This apparent interference with the nutrition of the pericemental membrane before the deposit of uric acid salts takes place is in accordance with what is believed to hold true for other manifestations of the gouty diathesis. It is generally conceded by pathologists that no tissue becomes the seat of any specific inflammation without some previous alteration in its nutrition, which renders it more or less vulnerable to the morbid agent circulating in the blood. It is well known that this is especially true of acute gout. All the parts exposed to strain, pressure, blows, contusions, etc., such as the joints of the feet and hands, are particularly liable to become the seat of the specific deposit. As a prophylactic measure, therefore, it is suggested that whenever there is the slightest tendency to pyorrhœa or any other evidence of the gouty diathesis, great care should be exercised in all dental operations, so as not to impair the nutrition of the peridontium and thus establish the necessary condition for the uric acid deposit. The constitutional treatment which has been indicated as efficient in the elimination of already established uric acid conditions, and the restoration of a faulty nutrition to its normal state, may with great propriety be subdivided into hygienic and medicinal. The hygienic treatment embraces systematic outdoor exercise, stimulation of the functional activity of the excretory organs, such as the skin, bowels, and kidneys, and regulation of the diet. Every dentist must appreciate the value of open-air exercise, and if the welfare of the patient is to be considered paramount, it must be insisted upon in all well-marked cases, and especially with those who for various reasons lead sedentary and inactive lives.

Increased muscular activity quickens circulation, induces deeper and fuller respiratory movements, leads to greater vigor in the general nutritive processes; waste products are removed more rapidly, and the combustion of the foods increased by the absorption of a large amount of oxygen. The promotion of the functional activity of the eliminating organs is well recognized as an important hygienic measure.

My friend, Professor Brubaker, suggests that where there is need of hygienic treatment the secretory function of the perspiratory and sebaceous glands and the capillary circulation should all be stimulated by sponging of the skin with cold water, vigorous friction, and an occasional Turkish bath, where such treatment is not contraindicated by pulmonary or cardiac affections; and that where the liver and intestinal glands are deficient in secretion, with prevailing constipation, they should be stimulated into activity by the use of saline waters, most excellent for this purpose being the Hunyadi Janos and Friedrichshall. These, he says, are especially to be commended because they contain a large percentage of sodium and magnesium sulphates, both of which are useful as eliminating agents. The kidneys should be assisted in the excretion of waste products by the free use of negative waters, or waters in which the saline constituents are at a minimum quantity. Hot or distilled water in sufficient quantity will flush the alimentary canal, increase the volume of blood, and stimulate the kidneys to increased activity. It is not only of common observation, but rather a remarkable fact, that gouty patients are inclined to drink but a comparatively small quantity of water. One quart of hot water taken daily, in four doses—before breakfast, between meals, and at bedtime—is considered most beneficial in its effects in dissolving and removing irritating products. The most important of the hygienic measures in the treatment of all gouty manifestations is that pertaining to the diet. As uric acid is considered a nitrogenized compound, and therefore presumably one of the imperfectly oxidized products of albuminous or nitrogenized foods, it is desirable that such foods be excluded as far as possible from the daily diet. The value of this measure is admitted and insisted upon by all clinicians.

In the milder manifestations of the gouty diathesis, such as we assume exists in pyorrhœa, it is not so imperative that all albuminous foods be prohibited. Nevertheless, as many of our patients are consumers of large quantities of meat, it would be well to insist, if the effort to cure is to be made, upon the total exclusion of beef, veal, mutton, and pork, restricting the patient in albuminous diet to white meat of chicken, fish, oysters, and lobsters. Cheese, beans, and the white of eggs are considered objectionable, and in many cases of acute gout are strictly prohibited by the attending physician. Experience has shown that various alcoholic drinks (such as port, madeira, and sherry) are particularly liable to give rise to the accumulation of uric acid. The lighter wines (as claret and hock) are not considered so injurious. The malt liquors (beer, ale, and porter) are also, with many clinicians, considered in their influence gross offenders.

If this assumption regarding pyorrhœa alveolaris be correct, the following, also furnished me by Professor Brubaker, is pertinent and applicable: The medical and constitititutional treatment, it is obvious, should be directed toward the elimination of uric acid and its compounds. For this purpose remedies which promote the formation of soluble and easily diffusible products which are readily eliminated by the kidneys are indicated. From time immemorial the alkalies and alkaline combinations have been used with marked success in the management of all phases of the gouty diathesis. The treatment of acute gout necessitates, of course, different or more vigorous remedies than those required for the subacute or chronic forms with which the dental practitioners will be called upon to deal. Of the various alkalies, lithium compounds, the citrate and carbonate, have been found best adapted to the milder phases of the disease. The form easiest to take is the compressed tablets containing five grains each of the citrate. One tablet three or four times daily will be found sufficient. Should this not agree with the patient, the potassium carbonate in ten-grain doses in some simple bitter, gentian or quassia water, three or four times daily, can be substituted. A valuable adjunct to the medicinal treatment is the free use of alkaline waters, which assist in the elimination of waste products, though it is probable that the good effects attributed to these are largely due to the quantity of liquid consumed. The Saratoga, Vichy, alkaline waters of Wisconsin, the Marienbad, Carlsbad, Appolinaris, etc., have all been found efficacious. Should the patient be highly dyspeptic, as is frequently the case, remedies directed to the digestive viscera are of course indicated. If anæmia be a concomitant, iron and quinine will be necessary. A combination which has been found of great value in improving the quality of the blood is one of iron and a salt of potassium. Blaud's pill, consisting of these two ingredients, is a desirable form for administration. One three times a day will be sufficient. However ingenious our interpretation of pathological conditions may be, and however plausible our deductions may appear, the ultimate test of their value will be the readiness with which they yield to and disappear under appropriate treatment. If pyorrhœa alveolaris be a manifestation of the gouty diathesis, and the symptoms and pathological conditions which characterize it be excited and maintained by the deposit and pressure of uric acids and its salts, it should be amenable to the same therapeutic measures which have been efficacious in the treatment of all other forms of gout in other portions of the body. It must be borne in mind, however, that though a case be cured for a period of six months, or even a year, this does not preclude a relapse should the patient return to an improper diet or irregular mode of life. It is hardly necessary to say that this is true of all chronic diseases. In individuals predisposed to uric acid accumulations an entirely new mode of life is to be instituted and followed with extreme care for a long period of time.

As corroborative, however, of the facts which have been adduced in this and previous papers in relation to age, occupation, heredity, constitutional condition, as well as the effects of treatment, I append the history of a few cases which may be of interest.

Case I.—Mr. A., aged forty-five. Family history: father died early from consumption; mother rheumatic (has lost nearly all her molars from pyorrhœa, which she has had for many years). The patient has been suffering from pyorrhœa for six or eight years. For nearly three years he has been under my care, his visits being monthly. Though not a tooth has been lost, the thirty-two have been the seat of well-defined pyorrhœa; gums œdematous, with veins engorged, giving a purplish color. Notwithstanding the continued local treatment, the most that can be said as to the benefit derived from this is that the disease did not progress, nor did it materially improve, save some abatement in the inflammatory condition of the gums. As an evidence of a gouty constitution, the patient had suffered with neuralgic headaches, vague rheumatic pains, and great mental depression. Several years ago he was informed by a distinguished clinician that the heart was depressed in its action from nitrogenized waste products. The patient admitted having largely confined his diet to meats. After, now, a little over three months' treatment, embracing restricted diet and the use of lithium and hot water, the discharge of pus has ceased from all the teeth except one third molar. The loosened teeth have become much firmer, the turgid condition of the gums has disappeared, and the gingival borders present a much more normal appearance. The patient on his last visit stated that mastication was performed without fear of dislodging the teeth.

Case II.—Mrs. B., aged fifty-five. Family history, gouty; one sister almost disabled from deposits in joints of hands, feet, and limbs; another sister has lost by erosion the enamel from the six anterior superior teeth. The patient has had pyorrhœa for eight or ten years, from which several teeth have been lost; ten others are now affected with looseness and some discharge of pus. The members of this family have been large consumers of meat. Treatment for two months with drinking hot water and modified diet gave improvement in flow of pus and inflammatory condition of gums.

Case III.—Mrs. C. Lost superior teeth from pyorrhœa; ten teeth remaining in lower jaw, all more or less affected with pyorrhœa. The patient has been under treatment for gout for some years. All the joints of the fingers are enlarged and painful from gouty deposits. The forehead and face show the result of herpes from previous herpetic eruption, regarded as of gouty origin. Treatment was followed by improvement.

Without wearying you with details of similar cases, permit me to say that in addition to the three cases just noted, ten others have been and are under treatment, all of whom, with the exception of three school-teachers, have presented other manifestations of gout. In these three cases a sedentary life and concentrated nitrogenous food have probably been instrumental in establishing the systemic condition leading to pyorrhœa. It is gratifying to recognize the fact that cases which have been brought under treatment of the restricted diet and the indicated constitutional treatment have given such encouragement that it is not unreasonable to hope that, with a continuation of the therapeutic measures and careful diet, the not-distant future will witness such abatement of the destructive symptoms that the cases can, with few exceptions, be recorded as confirmatory of the theory suggested in the foregoing papers.

The writer can certainly state that the local treatment alone which had previously been employed by him has not yielded such satisfactory results.—*International Dental Journal.*

DENTAL HYGIENE.

"WHAT shall I use to cleanse my teeth?" Seldom is it that a patient is released from a long and tedious operation, or finishes a series of engagements with the dentist, that the above or a similar question is not propounded.

"Now that my teeth are in order, how shall I assist in keeping them so?"

Hygiene is a science; practical hygiene is an art; practical dental hygiene, therefore, is the science and art of preserving and conserving the teeth, the oral cavity, and its contiguous tissues.

That the teeth and contiguous parts cannot be conserved by the dentist without the aid of the patient, and that they cannot be preserved by their owner without the assistance of the dentist, is a conceded fact. If, therefore, it is important that the dentist should be liberally educated, that he may be thoroughly capable of doing his part, it is equally important that he should be able to intelligently instruct his patients in the care of those natural organs he is so often called upon to extract, replace, or conserve.

Much is constantly being written for the edification of the practitioner, his education is being added to constantly, all sorts of devices are being invented to save time, labor, pain—and teeth; tons of new and good material are being thrown upon the market, but dental hygiene, as far as the patient is concerned, has been woefully neglected. Occasionally some thrifty advertiser conceives the plan of compiling a pamphlet upon the subject and distributes it among his patients and those whom he hopes to have for such, bearing his name as the author and his office address.

Much of the time dentists themselves differ so diametrically in their opinions—individual or borrowed—that the intelligent patient is led to doubt the benefits of following the counsel. The preservation of many teeth is probably due to this fact, inasmuch as much of the advice given is ruinous to the healthful mouth.

It may not be entirely out of place to refer to a late editorial in the *New York Medical Record*, even though the same has been repeatedly called attention to in other articles. It is there truthfully stated: "The dentist is content to fill the teeth, then disburse a bottle of his own special mixture of chalk, orris, and wintergreen, and tell his patient to brush the teeth *vis die.* The ordinary toothbrushing is entirely ineffective in preventing caries or disinfecting the mouth. For this purpose a genuinely antiseptic wash is needed, and this should be used for a considerable time. Just what this wash or powder should be, and just how long it should be used, is one of the things the dentist should find out. Let the American dentist devise a way of making the teeth and gums aseptic and preventing caries. He will then be greater than if he invented a new filling or novel drill, or transplanted a whole jawful of teeth."

It is true that the average practitioner is little given to instructing his patient in hygiene; and much of that that is tendered is of such a general, sweeping character that its good is lost. No two patients are suffering from the same conditions acted upon by the same influences and predispositions. The individual patient, therefore, must be treated, and not symptoms or diseases. That which may be of incalculable benefit to one may work an injury to another. Many of us claim to be able to wisely discriminate the indications for the use of plastic work or gold operations, yet perhaps we are in the habit of prescribing the same "dental powder" to every patient indiscriminately. Is that science?

Is it of more importance to be able to diagnose a condition which calls for a gutta-percha stopping instead of gold; to be able to restore that which has been lost in tooth structure with the very best substitute than to be informed of prophylaxis; to be able to prevent the loss of structure in the first place by the proper use of the proper agents at the proper time?

A recent article in the daily press gave valuable information to the layman upon the anatomy and physiology of the dental organs, and, after much thereon deserving of real merit, the author closed his dissertation by saying it is well to have the teeth examined semiannually by the dentist and brush them frequently.

The lack of stress both by position and brevity laid upon the closing hint, as was remarked, broke the whole force of the article, and it would have been immeasurably better had the author neglected altogether this most important of all admonitions than to have made it seem as unimportant as he did by his brief reference.

But such is a fair sample of the average dentist's instruction to his patients. He will dwell upon the advantages or disadvantages of this or that particular material, bridge, crown, or denture, but to the question, "How shall I care for my teeth?" he recommends a bottle of his chalk or soap solution, and another visit at the expiration of six or eight months.

Much too often these dentifrices recommended by the unthinking dentist contain elements of composition that are particularly fruitful in engendering just those conditions which he should seek to eradicate. Many powders are freighted with ingredients that are absolutely insoluble in the secretion of the salivary glands. These left in the mouth and about the teeth, insinuate themselves beneath the free margin of the gums; these, accumulating, irritate and inflame the soft tissues, and materially injure the hard ones.

Much of the so-called tooth paste is made up of soap and honeys, also containing insoluble portions. The soap is many times strongly alkaline, and is a constant and dangerous irritant to the gums. The honey, undergoing fermentation, is productive of just those injurious effects that sweets and candies inflict. Mouth washes are perhaps redolent with soap solution in order to produce the lather which is designed to give the user the impression of cleanliness.

It is an undeniable fact that such powders, pastes, and washes are formulated to the end that they may cleanse the teeth by frictional use of the brush only, at the expense of tooth structure. They may all contain one—sometimes more—of the volatile oils intended for flavoring to suit the purchaser, and also to act as a deodorizer of a fetid breath, caused by pyorrhœa and suppurating gums, which have their origin in the use of such irritating "swab" mixtures, recommended by ignorant practitioners.

In the most of these dentifrices, prepared alike for all patients (with the exception of the flavor, which seems to be the most important matter), no thought of antisepsis is given. No ingredient is added to make it a genuinely antiseptic or disinfecting remedy as it should be; nor is age, condition, or any other predisposition taken into consideration by the designer of such a panacea.

Let us have more light and science upon such an important matter by those who are best able to give it. More attention to antisepsis, better advice to patients, and a little "run on" prophylaxis now for a change.—*Editorial*, *Pacific Coast Dentist.*

THE TEETH OF OUR SCHOOL CHILDREN: WHAT CAN BE DONE TO SAVE THEM?*

BY JOHN C. M'COY, D.D.S., SANTA ANA.

No doubt this question has been asked by every intelligent practitioner. Those who live in small cities or towns, and practice for all classes of society, have a better opportunity to know the condition of the teeth of the masses than does our metropolitan brother with the aristocratic patient.

Ignorance and neglect go hand in hand, and are the cause of more diseases and of the loss of more teeth than all other causes combined.

For the past ten years my practice has been in a community that numbers among its citizens many persons of culture and refinement; others whose exterior appointments of life are all that could be desired, and whose children are being trained in all the arts and sciences of the day, except that of cleanliness of the mouth. We have thousands of this last class. I have examined and worked for hundreds of them in the past ten years. The ignorance on the part of the parents, and neglect on the part of the children who know better, is one of the wonders of the nineteenth century.

In one school of seven hundred pupils, five hundred from ten to eighteen years of age, I distributed printed slips with the following questions:

Do you cleanse your teeth with a brush every day?

Do you cleanse your teeth with a brush twice a day?

The teachers requested the students to answer the questions by writing the word "yes" or "no" to each question. The slips were immediately gathered up. On summing up it was ascertained that out of five hundred pupils, fifty cleaned their teeth twice a day, two hundred and seventy-five used the brush sometimes, while one hundred and seventy-five did not own a brush. Notice, the ages were from ten to eighteen. In the primary department of two hundred pupils, from six to ten years of age, the teachers say they did not think there were ten children in the department who used a toothbrush.

This school is not an exceptional one in this matter, as further inquiry and investigation demonstrated. In fact, its graduates take high rank at our universities; and if there is any difference, it is in advance of most schools in percentage of those who have clean mouths as well as neat clothes and bright faces.

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*Abstract of paper read before the American Medical Association.

When there is so much neglect and so little real care of the mouth, it is not strange that the sixth-year molars have to be sacrificed daily, because the patients cannot go to the expense of treatment to have them preserved, thinking all the time that this most valuable tooth is deciduous and soon to be replaced by one that is bacteria-proof and will last forever in a mouth that has never been properly cleansed.

The school of seven hundred pupils mentioned, where only fifty made any pretense to regularly care for the teeth, shows what a field for instruction and training every teacher has. What an opportunity for philanthropy and missionary work.

The question before us is: What can we do to save the teeth of our school children?

American dentistry leads the world to-day, and the world justly honors us for the great advances we have made in the preservation of teeth; but the fact still confronts us that millions of teeth are annually lost in America that need not have been sacrificed if proper care and cleanliness of the mouth had been commenced in childhood and continued to manhood or womanhood.

The dentists of America must solicit the aid of the public school teacher. With their cöoperation we can reach and train millions of children. A majority of the children of our land are in our public schools. They are under the teacher's instruction—from five to seventeen years of age. If the teachers were required to instruct and train the children in the proper care of their teeth, and insist upon their carrying out such instructions practically at home, we would have accomplished, or at least begun, a great work.

How can we bring this matter prominently before the educators of our land and secure their hearty cöoperation?

I hope this Association will pass a resolution indorsing the plan, and by its sanction give prominence to its importance.

Let the dental and medical press advocate it. Let each State Dental Association not only pass resolutions on the subject, but appoint a competent committee to arrange a manual on the subject of the teeth. Let the same committee induce the State Board of Education to adopt such a manual as a text-book to be used by teachers, and taught in our normal schools, requiring teachers to be able to pass an examination upon the contents of such a manual, and then require them to carry out such instruction in their respective schools. May each one of us constitute himself a special committee to see that the spirit of this paper is carried out practically in the schools of our neighborhood!—*The Pacific Coast Dentist.*

HOW TO MAKE LOWER PLATES SUCK.

BY DR. J. W. GREENE.

I AM asked to be more specific than in a former article. Now then: Get a perfect impression with the parts in their normal shape. This may take personal showing; it certainly takes considerable experience, and always the greatest care.

Make a model of uniform density, smooth and glossy on its surface, and so hard you can't drive a common brass pin into it. This takes the greatest care, but it can be done with experience and first rate plaster; and in difficult cases it is absolutely essential.

Flask with pressure so light as not to force the model out of shape. Vulcanize thoroughly at lowest temperature, and give your case from four to six hours to cool off slowly, that your plate may not warp from imperfect crystallization.

Trim the plate so that its dull, well-rounded edges don't bear more on the side muscles than on covered parts, nor press too hard on them. Nothing in all dentistry requires better judgment, more experience, or greater care than trimming a plate rightly. In lower plates see that your edges are blunt, well rounded from both sides, and smooth.

See that your articulation is perfect, the bicuspids and molars all "occluding" at the same time, under light pressure. Don't force an articulation by hard biting. The anterior teeth should hardly touch.

Those described some time ago by Dr. Haskell, where the cheek muscles are higher than the alveolar rim, the lower plate should be of molded metal, made with the care essential in that kind of work.

Now, boys (I say boys, for the old dentists know all this, but won't tell it), if these instructions are perfectly carried out in detail, step by step, any lower plate will have some suction, and most of them will stick as well as upper plates of equal areal contact. But a failure in any step may, and in unfavorable cases will, spoil all.

All this requires capabilities and time that will bring you above competition in charges with the bunglers and botchers and cheap Johns, that constitute largely the profession in mechanical dentistry. (Excuse me from the words "prosthetic" and "denture.")

In such work you must take things thoughtfully, coolly, slowly, and carefully—no "eight plates a day." One plate a day is enough for an old fogy like me; but when I'm done "she can test her teeth with dried beef to her heart's content, before she pays for it."—*Items of Interest.*

Brief Gleanings.

ANÆSTHESIA BY COCAINE DEPRIVED OF ITS DISADVANTAGES BY TRINITRINE.

Dr. Gautier (*Wien. Med. Presse*) recommends the addition of trinitrine to solutions of cocaine in order to render anæsthesia by this drug innocuous.

℞ Cocaine Muriate	3 grains.
Alcoholic Sol. Trinitrine (1.100)	10 drops.
Distilled Water	2½ drachms.

A hypodermic syringeful of this solution contains one-third grain of cocaine and one drop of the trinitrine solution. He has used this solution for two years without the slightest disadvantage. Thomas, of Marseilles, has employed this same solution in anæsthesia of the fauces and larynx. In three cases where a ten per cent. solution caused grave symptoms of poisoning this preparation was used with success. In all cases it was well tolerated. His solution was made according to the following formula:

℞ Muriate of Cocaine	45 grains.
Alcoholic Sol. Trin (1.100)	40 drops.
Distilled Water	1 ounce.

Local applications to the pharyngeal or laryngeal mucous membrane does not produce the well-known sensation of dryness which is usually observed with the use of cocaine, but an agreeable feeling. Trinitrine does not appear to reduce the anæsthetic and vaso-constrictive action of cocaine.—*Lancet-Clinic.*

TECHNIC TEACHING IN COLLEGES.

Probably the greatest advance in college instruction in recent years has been the introduction of technics as a fundamental basis from which to start the student in his acquirement of knowledge and manipulation in the practical departments of his work. College instruction is not yet perfect, but it is vastly nearer being perfect on account of this one thing. We do not believe that teachers in colleges where technics are not taught thoroughly and systematically can form the slightest idea of the benefits to be derived from this line of work. It directs the beginner into the proper channels at his very entrance into the college, and gives him an intelligent basis to work on throughout his whole college course, and, in fact, throughout his whole course in life. No man can fail being a better dentist as the result of this kind of instruction.—*Editorial, Review.*

ABNORMAL DEVELOPMENT OF THE TEETH, FORMING TUMORS OF THE JAW.

Dr. O. Hildebrand, Göttingen (*Deutsch Ztschr. f. Chir.*), makes a further statement upon the case which he reported in 1889, in which the child of twelve years, who had been submitted to various operations, had been relieved of between one hundred and fifty and two hundred teeth of various sizes.

In July, 1891, patient had again presented itself at the Göttingen surgical clinic. Both lower jaws were much thickened, as also the right upper jaw. On the whole there were found seventeen teeth, part of them normally developed, others in an undeveloped condition. Their position was deviated and irregular.

From the upper and lower jaw there were again some masses of teeth removed, which had the same configuration as those formerly described, and presented about one hundred and fifty teeth. Aside from this, there were found two round glassy bodies about the size of two peas, which upon microscopical investigation showed themselves to consist of tooth structure. The construction of teeth in this patient will continue, in all probability, until the soft tissues have all reached their final development, which will include the epithelial structure of the teeth.

SURGERY AMONG THE ANCIENT HINDOOS.

Dr. Ingenhoven has contributed an instructive article to a German medical journal, in which he shows that the ancient Hindoos possessed considerable knowledge of surgery. Operations for cataract seem to have been practiced in a remote age, for mention of them is made in a work written about 1,400 B.C. by a scholar of Dhanwantari, one of the most famous of their surgeons. The depression method was employed, the lens being depressed by a specially constructed needle and the procedure repeated until it remained below. As is well-known, rhinoplastic operations were practiced at an early period in India, for the purpose of improving the appearance of those unfortunate criminals whose noses had been sacrificed to the demands of justice. As in the modern procedure, the flaps were taken from the cheeks and forehead. Suprapubic cystotomy for stone in the bladder, and paracentesis for ascites were also known to these ancient surgeons.—*International Journal of Surgery.*

INFLUENCE OF SOLVENTS ON GERMICIDES.

THAT the liquids employed as solvents of carbolic acid sometimes affect its properties as a germicide has been demonstrated by several writers since Koch alluded to the matter in 1881. Recent experiments by P. Lenti, of the University of Naples, have demonstrated that absolute alcohol completely neutralizes the germicidal action of both corrosive sublimate and carbolic acid with regard to anthrax spores, and that a considerable proportion of water must be added before any germicidal action can take place. Glycerin impedes the action of sublimate when less than forty per cent. of water is present, and of ten per cent. solutions of carbolic acid when they consist of less than eighty per cent. of water. Carbolic acid and lysol also lose their disinfecting property entirely when dissolved in olive oil. It would appear, therefore, that alcohol, glycerin, and fatty bodies are unsuitable ingredients of liquid disinfectants.

BLEACHING WITH PYROZONE.

AT the recent joint meeting of the Maryland State and Washington City Dental Societies, Dr. C. A. Meeker, of Newark, N. J., successfully bleached a deeply discolored left superior central incisor in thirty minutes. His method, after carefully adjusting the rubber dam, is to wipe out the prepared cavity with ammonia, this to neutralize possible acidity; then with a gold probe, armed with a swab of bibulous paper saturated with pyrozone, twenty-five per cent., he liberally moistens the interior of the cavity and exterior surface of the tooth, evaporating the solution by repeated blasts of cold air. This method is continued till the tooth shines out again in its original color. The doctor is highly elated over his success with pyrozone as a bleaching agent, and speaks encouragingly of the stability of its results.—*D. E. Wiber, D.D.S., National University, Washington, D. C., in Items of Interest.*

MOUTH POULTICE.

DR. HUGENSCHMIDT recommends as the only practical poultice that can be used in alveolar abscess a fig boiled in a solution of boric acid and cut in halves, and the cut surfaces sprinkled with powdered boric acid. It will in most cases cause the abscess to discharge into the mouth. Should the abscess be far advanced and threaten to break through the cheek, then apply an ice compress with the above.—*Journal für Zahnheilkunde.*

HOW RAPIDLY WE THINK.

Helmholtz showed that a wave of thought would require about a minute to travel a mile of nerve, and Hersh found that a touch on the face was recognized by the brain and responded to by a manual signal in the seventh of a second. He also found that the speed of sense differed for different organs, the sense of hearing being responded to in the sixth of a second, while that of sight required one-fifth of a second to be felt and signaled. In all these cases the distance traversed was about the same, so the inference is that images travel more slowly than sounds or touch. It still remained, however, to show the portion of this interval taken up by the action of the brain.

Prof. Donders, by very delicate apparatus, has demonstrated this to be about seventy-five thousandths of a second. Of the whole interval, forty thousandths are occupied in the simple act of recognition, and thirty-five thousandths for the act of willing response.—*Pacific Record of Medicine and Surgery.*

TRIKRESOL AS AN ANTISEPTIC.

This new surgical antiseptic contains the cresols in a pure condition, and is practically free from phenol. It is a clear, colorless liquid with a pleasant odor resembling creasote, and is soluble in cold water to the extent of 2.2 to 2.5 per cent. The disinfectant value of the mixed cresols has been determined by Fränkel and confirmed by Gruber. They found that a 1 per cent. aqueous solution is equal to a 3 per cent. solution of carbolic acid, and consequently trikesol possesses the threefold disinfectant value of carbolic acid. It is cheaper than other preparations having cresols as active principle, because no additions are made. The solutions remain clear, do not corrode instruments, and neither make the hands of the operator slippery like lysol, nor numb like carbolic acid solutions. It is colorless and free from the pyridine odor of other cresol preparations.—*Therapist, Jan. 15, 1894.*

EQUAL TO THE OCCASION.

A dentist now practicing in Western Washington tells us how he succeeded in serving one of his former patients in Illinois. An old German had brought his wife in several times to have an upper set of teeth made, but there remained a solitary molar that wagged and rolled about in the old lady's jaw, and she steadily refused to have it removed. This performance had been kept up about a year, when on her last visit to induce the dentist to construct the denture without removing the offending molar, he decided to resort to diplomatic methods and ostensibly consented to take the impression, which he proceeded to do with plaster, making it a point to have the tooth well imbedded in the plaster. When the plaster was firmly set, he removed both it and the tooth from the mouth of the astonished lady.—*Pacific Journal.*

INFECTIONS FROM KISSING ANIMALS.

The disgusting and dangerous fondling and kissing of beasts cannot be effectually opposed, perhaps, on the whole; but some persons may be benefited by the repetition of warnings against the numerous infections which that practice is liable to incur; such as hydatids from dogs, diphtheria from cats and pigeons, and from cats the obstinate and loathsome diseases of ringworm and favus. Dr. Leviseur suggests this warning in the *Medical Record* from having had occasion repeatedly to trace individual cases, as well as small epidemics, of both ringworm and favus to their source in the endearment of cats. He gives two recent cases, with particulars of both cat and child. Favus, he states, is a disease peculiar to mice, from which the cat gets it.—*American Analyst.*

FUNCTION OF THE FIRST PERMANENT MOLAR.

An important function of the first permanent molar is that of fixing the bite. Erupted at a time antedating any of the other permanent teeth, by the time the bicuspidati are erupted it is fully formed and fixed; a bulwark against the forcing backward of the anterior teeth, and holding the maxillæ apart, so there will be no interference with the proper eruption of the incisors. Interference (unwise), or removal before the eruption of the bicuspidati, permits aberrations in the anterior articulation. Regulating caps, worn as a means of holding apart the jaws in regulating teeth, tend to shorten the exposed portion of its crown, and produce, in a less degree, the same effects. If the cuspidati are the keys of the arch, the first molars are the pillars.—*Henry Burchard, in Dental Cosmos.*

Hyperemesis.—One-half to one drop of oil of cloves in a little water will sometimes be found to control excessive vomiting quite speedily.

PYORRHEA.

I briefly give the following summary of my views:

1. Pyorrhea does not occur at the apices of roots as a distinct pathological condition.

2. Deposits may be found there, but always subsequent to the death of the pulp and pericemental membrane.

3. That uric acid may affect the membrane subsequent to the injury of that tissue, but is not directly the producing cause of lesions in that organ.

4. The actions of syphilis, scurvy, some medicines, and general disturbances have a similar effect to invite this pathological state.

5. Pyorrhea is a local disease, aggravated by systemic conditions, and to be treated on a clear comprehension of its local and constitutional complications.—*Dr. Trueman, in Items of Interest.*

DYSPEPSIA AND BEEF TALLOW.

Dr. Park Holland, of Hyattville, Wyo., writes: "I have found that in any gastric trouble accompanied by the eructation of gas, sour or otherwise, a liberal use of beef tallow to the exclusion of all pork fat (lard) is an excellent remedy. Beef tallow is rendered the same as lard—salt added after skimming. This will keep it sweet and wholesome in the warmest weather. Use this in the kitchen in place of lard. A person who is inordinately fond of 'grease' can saturate his food in this, with no resulting 'belching.' I treat the alternating diarrhea and constipation in the ordinary way, peculiar to each case, and find that I save the patient much time and distress."

TO DEODORIZE IODOFORM, CREOSOTE, AND GUAIACOL.

The odor of iodoform, creosote, or guaiacol upon the hands can be overcome by washing with linseed meal. Articles having an odor of iodoform may be washed in tar water to which oil of wintergreen has been added. The taste of pills of creosote can be disguised by means of a little powdered coffee. The odor of iodoform or guaicol in rooms can be dissipated by burning coffee.—*Deutsche Medizinal Zeit.; Monatsh. f. prakt. Dermatol.*

The Czar of Russia has contributed fifty thousand roubles, nearly $40,000, toward the expense of the next International Medical Congress.

Extracts. . . . .

FLIES AS GERM CARRIERS.

Prof. Fuchs has been investigating the cause of Egyptian ophthalmia, and writes as follows (*Medical Age*) concerning the results of his observations of the relation of flies to the propagation of this disease: "Aside from communication of the disease through fingers, washing, and the like, it is probable that flies also aid in its spread. The fly pest in Egypt is great. Though well prepared beforehand by books of travel, I was astounded when called upon to confirm the accounts with my own eyes. A few small children were playing before the hut or in the fields. Approaching the youngsters, one fancies, and often believes, that they have black rings painted around their eyes; but on coming close he sees that the black rings are dense circles of flies seated along the edges of the lids, and the inner angle of the eye. They seek for food in the secretion without encountering any disturbance, for the children do not disperse the pests, knowing that others with unsatiated appetite would at once take their places. In summer the situation is, of course, much worse, and the faces of the children are said then to be quite covered. As the flies pass from one eye to the other, it is natural to assume that they are capable of conveying the secretion. Lucian Howe caused flies to pass over a gelatin plate, when from every footprint a culture of germs was obtained. When the flies had been in previous contact with a diseased optic, the same microörganisms developed on the gelatin culture as were found in the secretion of the eye. Howe also calls attention to the fact that the Bedouins of the desert, where flies are much less abundant, are much less afflicted by eye diseases."—*Ed. Modern Medicine.*

INFLUENCE OF TOBACCO ON MICROBES.

M. Tussau recently reported (*Lyon Méd.*) three cases of tuberculosis of the tonsils, in all three of which the patients had been addicted to the very free use of both alcohol and tobacco. The reporter expressed the opinion that the use of alcohol and tobacco is a predisposing cause of a tuberculous infection of the tonsils. In one case, in which the disease was cured by thorough cauterization of the tonsils, the patient, an inn keeper, remained well for some little time, but on resuming his bad habits was again attacked by tuberculosis, and died of the disease, which became general.

In still another case the local disease was cured; but the patient, a soldier, continued his bad habits, and a few months later died from a return of the malady. These observations afford the best possible evidence against the theory that tobacco is in any way advantageous as a germicide. Of all the various pathogenic microbes which attack the body, those of tuberculosis are perhaps the most easily destroyed, yet the antiseptic quality of tobacco, even when used to a great excess, as in the cases reported by M. Tussau, has no influence whatever in preventing their development in the mouth, but actually encourages the growth by producing an irritated and inflamed condition of the tonsils.

HOW TO REST.

To understand the way to rest is of more importance than to know how to work. The latter can be learned easily; the former it takes years to learn, and some people never learn the art of resting. It is simply a change of scenes and activities. Loafing may not be resting. Sleeping is not always resting. Sitting down for days with nothing to do is not restful. A change is needed to bring into play a different set of faculties and to turn the life into a new channel. The man who works hard finds his best rest in playing hard. The man who is burdened with care finds relief in something that is active, yet free from responsibility. Above all, keep good-natured and don't abuse your best friend, the stomach.—*Ohio Dental Journal.*

DELTA SIGMA DELTA BANQUET.

THE third annual banquet of the Delta Sigma Delta Fraternity was held on Friday evening June 1, 1894, at the Maison Dorée. Mr. H. H. Stephenson, of the Senior Class, officiated as toast master. The following toasts were drunk and appropriately responded to: "The Fraternity," Dr. W. F. Sharp; "The Faculty," Dr. C. L. Goddard; "The Supreme Chapter," Dr. H. P. Carlton; "The College," Dr. L. L. Dunbar; "The Undergraduates," Dr. L. Van Orden; "The Ladies," Dr. W. J. Younger.—*The Pacific Coast Dentist.*

OBTUNDING SENSITIVE DENTINE.—After applying the rubber dam, fill the cavity with Solution No. 1, slightly warmed. Follow this by a continuous blast of warm air till the contents of the tubuli are thoroughly extracted. Then apply Solution No. 2 direct to the cavity in liquid form. Force on this a warm vapor from a suitable glass-cylindered hot-air syringe. When the cavity is dry, excavate with a small, sharp bur with light and rapid motion, always cutting from the pulp.

Solution No. 1:

Absolute alcohol	1 oz.
Veratria	8 grs.

Solution No. 2:

Oil cassia	50 parts.
Absolute alcohol	40 parts.
Campho-phenique	5 parts.
Carbolic acid	3 parts.
Oil cloves	2 parts.

Wash the cavity before removing the dam.—*Fred. Adolph Kotts, Manchester, Mich., in Items of Interest.*

Editorial. . . . .

THE FIFTIETH ANNIVERSARY OF THE DISCOVERY OF ANÆSTHESIA.

The movement to appropriately celebrate this event has met with universal approval, and the enthusiasm manifested by all interested in the preliminary preparations forecast an occasion which will make the name of Wells a household word the world over.

At Old Point the American Dental Association appointed a committee of nine, consisting of Drs. J. D. Thomas, Philadelphia; Thomas Fillebrown, Boston; J. Taft, Cincinnati; James McManus, Hartford; W. H. Morgan, Nashville; W. C. Barrett, Buffalo; A. W. Harlan, Chicago; H. J. McKellops, St. Louis; and Thomas E. Weeks, of Minneapolis, to formulate a plan for such a celebration.

This committee submitted the following report, which was adopted:

Mr. President and Gentlemen: Your Committee upon Anæsthesia would report that they have agreed upon the following motions:

1. That the fiftieth anniversary of the discovery of anæsthesia by Horace Wells should be properly celebrated by the dental profession of America.

2. That the celebration should comprise the presentation of two papers: one upon the "History of the Discovery of Anæsthesia," and the other upon the "Application of Anæsthesia to Surgery and its Benefits to Mankind;" and that Dr. Thomas Fillebrown, of Boston, Mass., be invited to present the paper upon the "History of the Discovery of Anæsthesia," and that Dr. J. E. Garretson, of Philadelphia, Pa., be invited to present the one upon the "Application of Anæsthesia to Surgery."

3. That a banquet be given in honor of the event, at which prominent gentlemen shall be invited to make addresses, and that the papers and addresses, properly edited, shall be compiled and preserved in a memorial volume appropriate to the importance of the occasion.

4. That after the claims and advantages of the cities of Hartford, Boston, Washington, New York, and Philadelphia had been presented and discussed, Philadelphia was unanimously selected as the place of meeting.

5. That there be three committees appointed: an Organization Committee of nine, an Executive Committee of eleven, and a General Committee of fifty.

The following gentlemen were nominated upon the several committees:

Organization Committee.—J. D. Thomas, James McManus, H. J. McKellops, Thomas Fillebrown, A. W. Harlan, Thomas E. Weeks, J. Taft, W. H. Morgan, W. C. Barrett.

Executive Committee.—J. D. Thomas, E. T. Darby, S. H. Guilford, D. N. McQuillen, E. C. Kirk, Louis Jack, C. N. Peirce, Philadelphia; A. L. Northrop, William Carr, New York; H. B. Noble, Washington, D. C.; James McManus, Hartford, Conn.

General Committee.—Dana W. Fellows, Maine; James Lewis, Vermont; J. L. Williams, R. R. Andrews, Massachusetts; E. D. Gaylord, Connecticut; C. A. Brackett, Rhode Island; S. B. Palmer, S. G. Perry, O. E. Hill, W. W. Walker, New York; R. M. Sanger, C. A. Meeker, New Jersey; C. R. Jeffries, Delaware; J. A. Libbey, W. H. Fundenburg, Pennsylvania; B. Holly Smith, M. W. Foster, Maryland; J. H. Moore, Virginia; V. E. Turner, North Carolina; T. T. Moore, South Carolina; J. H. Coyle, B. H. Catching, Georgia; C. P. Robinson, Alabama; George B. Clements, Mississippi; G. J. Friedrichs, Louisiana; W. R. Clifton, Texas; A. H. Fuller, J. D. Patterson, Missouri; A. O. Hunt, Iowa; C. M. Bailey, Minnesota; T. W. Brophy, G. V. Black, G. H. Cushing, Illinois; S. B. Brown, Indiana; J. S. Cassidy, F. Peabody, Kentucky; J. Y. Crawford, H. E. Beach, Tennessee; G. L. Field, Michigan; H. A. Smith, C. R. Butler, A. F. Emminger, Ohio; A. H. Thompson, Kansas; A. W. Nason, Nebraska; G. H. McCausey, Wisconsin; W. J. Younger, C. L. Goddard, E. L. Townsend, California; George H. Chance, Oregon; W. E. Burkhart, Washington.

It is to be hoped that the results of this meeting may be so conclusive in character that it will set at rest the dispute concerning the claims of priority of Wells, Morton, and Long that has so long agitated the minds of the medical and dental professions.

To him who first publicly proclaims a discovery belongs the honor of such a discovery, even though another individual may have, prior to that time, been in possession of all the knowledge given, or even more.

It was Horace Wells who first announced to the world that the surgical operation of extraction of teeth could be performed without pain. It was his conception that this immunity from pain could be secured by the inhalation of a drug, and the result of his experience proved it.

This celebration should meet the cordial support of every one who appreciates how greatly indebted suffering humanity is to one who made the whole world his debtor, yet did not live long enough to feel its heart throbs of gratitude.

STATE BOARD OF DENTAL EXAMINERS.

A CALLED meeting of the State Board was held in Nashville Saturday, September 8, at the office of its President, Dr. J. Y. Crawford. There were present: Drs. J. Y. Crawford; W. T. Arrington and J. L. Mewborn, Memphis; and H. E. Beach, Clarksville.

Dr. Crawford resigned as President and as a member of the Board, and Dr. F. A. Shotwell, of Rogersville, was elected President to succeed him.

Dr J. B. Morgan, of Dayton, was examined, and received a license to practice.

The Board adjourned to meet at Knoxville with the State Dental Association in July, 1895.

Dr. Crawford's resignation was occasioned by his acceptance of the chair of Dental Pathology and Clinical Dentistry in the Dental Department of the University of Tennessee, and by his holding the view that it is not consistent or for the best interests of dental legislation for one connected with a dental school at the same time to fill a position on a Board of Dental Examiners.

The profession throughout the State will regret to learn that such a step was thought necessary, for it was through his influence, more than any other man, after repeated efforts, that the law was finally passed by the Legislature.

While it will be difficult to supply his place upon the Board, his colleagues who remain are men of broad minds, experienced and conservative, liberally educated and fully competent to carry out the provisions of the law.

Since writing the above, his Excellency, Gov. Turney, has appointed our fellow-citizen, Dr. W. H. P. Jones, to fill the vacancy occasioned by the resignation. He is a fair-minded gentleman, and the interests of the profession and Board will not suffer at his hands.

IMPORTANT WORK.

The American and Southern Dental Associations at Old Point Comfort appointed committees composed of representative members to do what we consider very important work before their next meetings.

The American Dental Association appointed a committee on nomenclature, consisting of Drs. Guilford, Ottofy, Rhein, Weeks, Goddard, Shepard, Stubblefield, Molyneaux, and A. H. Thompson, to arrange and make an exhaustive report upon dental nomenclature.

The Southern Dental Association appointed a commission composed of Drs. John S. Marshall, R. R. Freeman, and H. B. Noble, to take in consideration such mooted questions as may be referred to them, and ascertain if possible what is their correct solution. In the event no such questions are presented, they are empowered to select such as they may deem of special interest to the profession.

In addition to the customary President's address in the American Association, two general addresses on subjects of general interest are hereafter to be delivered on the second and third days respectively of each annual session.

The American Association adopted a resolution appointing a committee to confer with the Southern Dental Association as to the possibility of a union of the two organizations. Drs. Thomas Fillebrown, J. Y. Crawford, J. N. Crouse, Louis Jack, and B. Holly Smith compose said committee.

THE UNIFICATION OF DENTAL LAWS.

At the recent meeting at Old Point Comfort, Dr. R. R. Freeman introduced the following resolution:

Resolved, That the Southern Dental Association, with a view to unity, harmony, and concerted action, appoint a Special Committee on Dental Legislation, to represent it in any movement in which coöperation may be sought, or its "good offices" accepted for the improvement and unification of dental laws.

The President, Dr. B. Holly Smith, appointed on this committee Drs. R. R. Freeman, M. F. Finley, and J. Y. Crawford.

The subject was fully discussed in the *American*, and Drs. B. Holly Smith, A. W. Harlan, and J. Y. Crawford were appointed to act with similar committees from other associations.

The effort is made in the interest of the popular ideas that a certificate or license from one State Board of Dental Examiners should exempt its holder from examination in another State, and that a diploma should be evidence of qualification sufficient to entitle its holder to a permit to practice.

"WILLIAMS vs. STATE BOARD OF DENTAL EXAMINERS" OF TENNESSEE.

In the April issue appeared the following editorial concerning this case:

> Some time ago the State Board of Dental Examiners refused to register holders of diplomas of the Knoxville Dental College, that institution not having complied with the board's advanced standard of requirements for graduation. Suit was brought by the college in the name of M. B. Williams, one of its graduates, for a *mandamus* against the State Board to compel it to recognize his diploma. The case was tried before Judge Moon, at

Chattanooga, in February, who decided, according to the *Chattanooga Times* of March 3, that "the powers of the State Board of Dental Examiners are at least *quasi* judicial, and that the courts are powerless by writ of *mandamus* to force any board of inferior jurisdiction, having judicial powers, to exercise those powers in any particular or designated way or manner; but if the power has once been exercised by said board, and its judicial determination made known, then if any other act by the board is to be performed—such as the mere issuance of a certificate—after the determination of the judicial question, such act is not judicial in its character, but purely ministerial, and the power of the court to force by writ of *mandamus* the performance of a ministerial act of this character cannot be questioned."

Thus it will be seen that the right of the board under our law to determine the reputability of a dental institution of learning is fully sustained, and its decision must stand unless overruled by the Supreme Court, to which tribunal an appeal was taken.

The appeal came before the Supreme Court in September, at Knoxville, and Judge Wilkes rendered an opinion sustaining the board and lower court. From a Knoxville paper we copy the following extract from the decision:

> The evident intent of the act was to lodge in the Board of Examiners not only the authority to pass upon the genuineness of the diploma, but also whether the college issuing the diploma was a reputable one. The decision of the board cannot be reviewed by *mandamus* unless it is arbitrarily exercised. In this case the board did not act arbitrarily. If the board cannot pass upon the reputability of the college issuing diploma, a person with a diploma from any school of whatever character would be as much entitled to practice as the person from the best school.
>
> The action of the circuit court in declining to require the board to issue certificate in this case without applicant standing an examination is affirmed with costs.

THE EAST TENNESSEE DENTAL ASSOCIATION.

We are glad to note the revival of interest and signs of progress in the East Tennessee Dental Association, and from the zealous attitude of its present membership, and the efficiency of its officers and Executive Committee, the next annual meeting, to be held at Harriman, Tenn., gives promise to excel in point of interest and attendance any previous meeting of the society.

Harriman, Tenn., is a thrifty and enterprising town, and the Association's worthy Secretary resides there and signifies his intention to leave no stone unturned in his efforts to bring forth a large attendance, etc. We wish the Association abundant success, and hope to meet with them on the second Tuesday in June, 1895.

Association Proceedings. . . . . .

NATIONAL ASSOCIATION OF DENTAL FACULTIES.

The eleventh annual session of the National Association of Dental Faculties was held at the Hygeia Hotel, Old Point Comfort, Va., commencing Saturday, August 4, 1894; the President, Dr. H. A. Smith, of Cincinnati, in the chair.

The resignation of Dr. J. E. Cravens as Secretary was accepted, and Dr. Louis Ottofy, of Chicago, was made Secretary *pro tem.*

The following Faculties were represented:

Baltimore College of Dental Surgery, B. Holly Smith.
Boston Dental College, J. A. Follett.
Chicago College of Dental Surgery, T. W. Brophy.
Harvard University, Dental Department, Thomas Fillebrown.
Kansas City Dental College, J. D. Patterson.
Missouri Dental College, A. H. Fuller.
New York College of Dentistry, Frank Abbott.
Ohio College of Dental Surgery, H. A. Smith.
Pennsylvania College of Dental Surgery, C. N. Peirce.
Philadelphia Dental College, S. H. Guilford.
State University of Iowa, Dental Department, W. O. Kulp.
University of Michigan, Dental Department, J. Taft.
University of Pennsylvania, Dental Department, James Truman.
Vanderbilt University, Dental Department, H. W. Morgan.
Louisville College of Dentistry, F. Peabody.
Southern Medical College, Dental Department, C. V. Rosser.
University of Tennessee, Dental Department, J. P. Gray.
University of Maryland, Dental Department, F. J. S. Gorgas.
Royal College of Dental Surgeons of Ontario, J. B. Willmott.
Columbian University, Dental Department, H. C. Thompson.
Northwestern University Dental School, G. H. Cushing.
American College of Dental Surgery, Louis Ottofy.
National University, Dental Department, J. Roland Walton.
College of Dentistry, University of Minnesota, T. E. Weeks.

The following schools were admitted to membership during the meeting:

Western Reserve University, Dental Department, Cleveland, O., H. L. Ambler.

Western Dental College, Kansas City, Mo., D. J. McMillen.

With reference to the application of Howard University, Dental Department, the Executive Committee recommended that in consequence of changes in and inadequacy of its dental department the application be rejected. The report was adopted.

The report of the Executive Committee recommending the admission of the University of Buffalo, Dental Department, to membership, was amended by the addition of the following clause, and then adopted: "When the honorary degrees conferred on Messrs. Southwick and Howard are returned to the university and revoked, and official notification of such revocation filed with the Secretary of this association." *

The amendment to Rule 5 offered by Dr. Hunt last year, making the rule read as follows, was adopted unanimously:

> "(5.) Standing of Undergraduates in Medicine.—Undergraduates of reputable medical colleges, who have regularly completed one full scholastic year, having attended at least seventy-five per cent. of a five months' term, and passed a satisfactory examination in the studies of the freshman year, may be admitted to the junior grade in colleges of this association, subject to other rules governing admission to that grade.

The following new applications for membership, with their recommendations, were reported by the Executive Committee:

Dental Department, Cleveland University of Medicine and Surgery, Cleveland, O. Recommended by Drs. J. Taft and J. E. Garretson.

Cincinnati College of Dental Surgery, Cincinnati, O. Recommended by Drs. James Truman, T. W. Brophy, F. J. S. Gorgas, and J. A. Follett.

Birmingham Dental College, Birmingham, Ala. Recommended by Drs. W. H. Morgan and C. V. Rosser.

University College of Medicine, Dental Department, Richmond, Va. Recommended by Drs. F. J. S. Gorgas and H. W. Morgan.

Atlanta Dental College, Atlanta, Ga. Recommended by Dr. W. H. Morgan and the Faculty of the University of Tennessee, Dental Department.

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* The Dental Department of the University of Buffalo complied with these conditions on August 13, 1894, and is therefore admitted into full membership.—Louis Ottofy, *Secretary.*

The amendment to By-law 4, which was offered by Dr. Hunt last year, was laid on the table.

The resolution offered last year by Dr. Sudduth, directing the addition of Latin and physics to the entrance examination, was also laid on the table.

The special committee appointed last year to consider the matter of the vote of censure passed upon the Baltimore College of Dental Surgery reported through its Chairman, Dr. C. N. Peirce, recommending that no further action be taken. The report was adopted.

Dr. Louis Ottofy offered a recommendation which was adopted, that all colleges, members of this association, shall increase the college course of 1895–96 to not less than six months.

The following resolution from the Executive Committee was adopted:

Resolved, That any college or colleges making application for membership in the National Association of Dental Faculties shall be required to secure and present to the Executive Committee the approval and indorsement of the Board of Dental Examiners of the State (where such Boards exist) in which such colleges are located, before their application can be considered.

The following from the Executive Committee was laid on the table:

Resolved, That we regard it as inconsistent for any member of a Faculty of any college holding membership in this body to at the same time be a member of any State Board of Dental Examiners.

The report of the Ad Interim Committee with reference to charges preferred against the University of Maryland, Dental Department, was referred to the Executive Committee, which reported as follows:

Your Executive Committee respectfully reports that it finds that the University of Maryland, Dental Department, in the reception of certain students did violate the regulations of this association, through a misapprehension of the rules, as it is interpreted by your committee that the regular sessions of all colleges close with their Commencement exercises.

The report was adopted.

Dr. Guilford moved that Rule 11, page 12, of the "History" be understood to mean that students coming from a college not a member of this association will not be given credit for any time spent in such institution.

The annual dues were increased from $3 to $5 on motion of Dr. Cushing, the increase to take effect in 1895–96.

On motion of Dr. Truman, the special committee on preliminary examinations was instructed to have prepared by a competent person, and present at the next annual meeting, a list of questions of a standard covering every branch required in the grammar schools up to the point of admission to the high schools.

On motion of Dr. Abbott, it was ordered that each college should each year present its announcement, noting any changes, the Secretary to note and publish all important changes in the annual report of the association.

On motion of Dr. Morgan, all the schools were required to comply with the rule regarding dissections.

On motion of Dr. Ottofy, a committee of three was appointed to revise the Constitution and By-laws, with the further instruction, on motion of Dr. Truman, to drop the qualifying term "by."

The following were introduced, and under the rules lie over till next year.

By Dr. Peirce:

Resolved, That, in view of the recommendation of the Executive Committee, this association will require that all colleges, members of this association, shall extend the term of the session of 1896–97 and of succeeding sessions to not less than seven months each.

By Dr. Truman:

Resolved, That on and after the session of 1898–99 the regular session of each of the colleges belonging to this association shall be extended to four years.

By Dr. Ottofy:

Beginning with the session of 1896–97, the examinations conducted by the colleges of this association shall be in the English language only.

By Dr. Ottofy:

Beginning with the session of 1895–96, no college shall be permitted to retain membership in this association if it is conducted or managed, in whole or in part, by any person or persons who do not practice dentistry in accordance with well-recognized and generally accepted forms, generally known as dental ethics, or if they are owned in whole or in part by men or women who are engaged in disreputable dental practice, or if any college have upon its list of trustees, the Faculty, demonstrators, or in any other capacity, any one who does not practice dentistry in accordance with the principles above mentioned. This shall refer to dentists only.

By Dr. Ottofy:

Beginning with the session of 1896–97, the following shall be the requirements for the admission of students to the colleges of this association:

a. A certificate of having successfully completed at least one full year's course of study in the collegiate department of any college or university registered by the regents of the State of New York as maintaining a satisfactory standard.

b. A certificate of having passed, in a registered institution, examinations equivalent to the full collegiate course of the freshman year, or to a completed three years' academic course.

c. Regents of the State of New York pass cards for any forty-eight counts.

d. A certificate of having passed the matriculation examinations of any university in Great Britain or Ireland, or of having completed a course of study recognized as an equivalent therefor.

e. A certificate of graduation from any registered gymnasium in Germany, Austria, or Russia.

f. A certificate of the successful completion of a course of five years in a registered Italian *ginnasio* and three years in a *liceo.*

g. The bachelor's degree in arts or science, or substantial equivalents, from any registered institution in France or Spain.

h. Any credential from a registered institution, or from the government in any foreign State or country, which represents the completion of a course of studies equivalent to graduation from a registered New York high school, academy, or from a registered Prussian gymnasium.

By Dr. Gray:

Resolved, That law 7 of the By-laws, which now reads "attendance upon three full courses of not less than five months each in separate years shall be required before examination for graduation," be amended by substituting "six" instead of "five," to take effect on and after the year 1896–97.

By Dr. Willmott:

Resolved, That at least twenty-nine months intervene between the beginning of the freshman year and the date of graduation.

The Committee on Text-books presented the following report, which was adopted:

Your Committee on Text-books would report that only two works of this character have been presented for its consideration: One, a work on "Dental Anatomy and Pathology," by Dr. C. F. W. Bödecker, of New York, 700 pp.; and the other, a smaller and less pretentious work of about 75 pp., on "Operative Technics," by Dr. Thomas E. Weeks, of Minneapolis.

Both of these works are in press and nearly completed. The treatment of their subjects is full, clear, and concise, and the illustrations numerous, well executed, and for the most part entirely new.

Your committee would therefore recommend these two works for indorsement as text-books.

Suitable resolutions regarding the death of Drs. R. B. Winder and W. H. Eames were presented and adopted, and the Secretary was instructed to communicate a copy to the respective families.

The following officers were elected for the ensuing year: Frank Abbott, President; S. H. Guilford, Vice President; Louis Ottofy, Secretary; H. W. Morgan, Treasurer; J. Taft, B. Holly Smith, and Thomas Fillebrown, Executive Committee; James Truman, Truman W. Brophy, and Francis Peabody, Ad Interim Committee.

Dr. Abbott, the newly elected President, was installed, and appointed the following committees:

Committee on Schools: J. A. Follett, F. J. S. Gorgas, Louis Ottofy, C. N. Peirce, and Truman W. Brophy.

Committee on Text-books: J. D. Patterson, A. O. Hunt, J. B. Willmott, T. E. Weeks, and J. P. Gray.

Adjourned.

NATIONAL SCHOOL OF DENTAL TECHNICS.

On the last day of the World's Columbian Dental Congress representatives of technic teaching from the following schools met to confer upon the advisability of forming an organization for the advancement of technics and to secure uniformity in its teaching. The following schools were represented: Northwestern University Dental School, D. M. Cattell; Dental College of the University of California, H. P. Carlton; College of Dentistry, University of Minnesota, T. E. Weeks; Dental Department, Vanderbilt University, H. W. Morgan and J. A. Dale; Louisville College of Dentistry, Francis Peabody; Western Reserve University, Dental Department, W. H. Whitslar; Royal College of Dental Surgeons of Ontario, J. B. Willmott; Ohio College of Dental Surgery, H. A. Smith; Chicago College of Dental Surgery, T. W. Brophy; American College of Dental Surgery, Louis Ottofy; Dental College of the University of Michigan, J. Taft.

Dr. Cattell was elected Chairman; and Dr. Dale, Secretary. A resolution was passed restricting the membership to professors of operative and prosthetic dentistry and teachers of dental technics in colleges belonging to the National Association of Dental Faculties.

Drs. Weeks, Carlton, and Dale were appointed a Committee on Constitution, and the conference adjourned to meet at Old Point Comfort at the time of the meeting of the American Dental Association to perfect its organization.

Meetings were held at Old Point Comfort pursuant to adjournment, all of the schools concerned in the preliminary meeting being represented except the Dental College of the University of California.

The Committee on Constitution presented their report, and a Constitution was adopted providing that the name of the association shall be "The National School of Dental Technics;" the officers to be a President, Vice President, Secretary-Treasurer, elected annually, and an Executive Board of three, the members of the first board chosen to hold office respectively for one, two, and three years, and thereafter one member to be elected annually to serve three years. The duties of the Executive Board are to pass on all applications for membership, audit all bills, and provide a program for the sessions, which shall consist of reports of the technic work done in various departments. The reports of the proceedings are to be published each year.

The following were elected officers: D. M. Cattell, Chicago, President; T. E. Weeks, Minneapolis, Vice President; J. F. Stephan, Cleveland, Secretary-Treasurer. Executive Committee: T. E. Weeks (three years), Chairman; H. W. Morgan, Nashville (two years); George H. Wilson, Cleveland (one year).

Reports were made by Drs. Cattell and Weeks in two courses, covering the technical study of dental anatomy by dissection of teeth and printing silhouette pictures, etc.; and operative technics, covering so much of the knowledge of operative dentistry as students should possess before entering the infirmary. By Dr. Wilson, one course, systematic and practical, of the principles of prosthetic dentistry and crown and bridge work; also a course of laboratory technics reported by Dr. Weeks for Dr. D. C. Bailey, of the University of Minnesota, covering steel technic, vulcanite, metal, and continuous gum, orthodontia, and crown and bridge work. This course is also a sequential, systematic, practical course of the elements of the subjects named.

These reports were listened to with interest by a number of teachers not members, and in the discussion a number of useful suggestions were made.

Adjourned to meet at Asbury Park, August, 1895.—*Dental Cosmos.*

THE EAST TENNESSEE DENTAL ASSOCIATION.

THE East Tennessee Dental Association held its twenty-seventh annual session at Athens, Tenn., September 13, 14, and 15, 1894. The meeting was one of unusual interest, and proved both pleasant and profitable to all present.

This Association has inaugurated the plan of having one public meeting during each session, at which the President's annual address is read, and other addresses delivered. This is done to educate the masses as to dentistry, etc.

Dr. U. D. Bilmyer, of Chattanooga, read his annual address Thursday night in public, and Dr. J. Y. Crawford, of Nashville, made a most excellent and instructive address, which was greatly enjoyed and appreciated by all present.

The officers of the Association for the next year are as follows: Dr. F. A. Shotwell, President, Rogersville, Tenn.; Dr. J. C. Grant, Vice President, Athens, Tenn.; Dr. George C. Brause, Secretary and Treasurer, Harriman, Tenn.; Dr. G. W. Day, Corresponding Secretary, Cleveland, Tenn. Executive Committee: Dr. W. F. Fowler, Chairman, Greenville, Tenn.; Dr. B. D. Brabson, Knoxville, Tenn.; Dr. N. L. Hale, Sweet Water, Tenn.; Dr. W. G. Buchanan, Dayton, Tenn. Next place of meeting, Harriman, Tenn., second Tuesday in June, 1895. Delegates were appointed to the American Dental Association as follows: Drs. A. W. Palmer, S. B. Cook, C. H. Smith, and U. D. Bilmyer, of Chattanooga; W. H. Richards and B. D. Brabson, Knoxville; F. A. Shotwell, Rogersville; W. F. Fowler, Greenville; J. C. Grant, Athens. A. W. Palmer, *Secretary.*

AMERICAN DENTAL SOCIETY OF EUROPE.

The nineteenth annual meeting was held at Geneva August 6–8. The following officers were elected for the ensuing year: President, Dr. Charles W. Jenkins, Zürich; Vice President, Dr. William Mitchell, London; Treasurer, Dr. Charles J. Monk, Wiesbaden; Secretary, Dr. William S. Davenport, Paris. Executive Committee: Dr. Jenkins, Dr. G. C. Daboll, and Dr. A. C. Hugenschmidt, of Paris. Membership Committee: Dr. Mitchell; Dr. L. C. Bryan, of Basel; Dr. Waldo Royce, of Tunbridge Wells. The next meeting will be held at Boulogne the first Monday in August, 1894.

William S. Davenport, *Secretary.*

MARRIED.

Dr. Clarence V. Rosser, of Atlanta, Ga., to Miss Elizabeth, daughter of Mrs. Elizabeth Hays, at Elizabethtown, Ky., September 5, 1894.

Dr. J. O. Templeton, to Miss Minnie, daughter of Mr. J. C. Matthews, of Bass, Ala., Wednesday, September 12, 1894.

T·H·E

DENTAL HEADLIGHT.

VOL. 16. NASHVILLE, TENN., JANUARY, 1895. NO. 1.

Original Communications. . . . .

RISE AND PROGRESS OF DENTISTRY.*

BY W. F. FOWLER, D.D.S., GREENVILLE, TENN.

In taking a retrospective view of the past we find many changes, and, in many respects, wonderful improvements; in a few instances, a retrograde; by this we mean in the general routine of the business transactions of life. As to that, however, we pass, and shall confine ourselves to that theme, all-absorbing, most interesting, and important to the dental profession.

Not having been acquainted with the theories and manipulations of other vocations, we cannot say as to the gigantic strides that have been made, and can only speak as a looker-on and well-wisher of what passes to a casual observer; yet we venture the assertion that there has been a more healthy growth, upon purer scientific principles, in the dental profession than any other vocation of which we have any knowledge. Our achievements and progress have been seemingly slow; yet contesting thoroughly all obstacles intended to thwart the purposes for which we set out as a learned profession, all this has been accomplished by a persistent and determined effort, and, whilst we have made haste slowly, we are aware that the world was created during epochs of time. Rome was not built in a day. You did not grow to man's stature in one night. There is seed time, and afterwards harvest. Nothing springs to perfection at once.

Do not expect impossibilities, but simply the possible, for which efforts have been made. Patience is not in conflict with enthusiasm; the one is copartner with the other; neither will get far without the other; together, they are invincible.

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* Read before the East Tennessee Dental Association, September, 1894.

Ruskin has said: "It is not a question of how much we are to do, but of how it is to be done; it is not a question of doing more, but of doing better."

Thus we have plodded our way until, after a lapse of three quarters of a century, a rude art has been changed to a learned science. In fact, it did not really begin until after the founding of the first dental college, fifty-four years ago. This, with the bold stand of the first dental journal, showed up the wrongs and utter insufficiency of the selfish methods commonly practiced.

Every dentist kept his own counsel, and what he had learned a profound secret; consequently those in search of fine operations must call upon the "ideal" dentist. This was the condition of dentistry at the founding of the first college and first journal. Then, dentistry's progress is due to American energy and perseverance, founded upon true principles, the result of diligent research and investigation, the starting point to success. The mind never creates entirely new knowledge independent of experience, and all that the reasoning powers can do is to arrive at the full meaning of the facts in our possession. Hence we must have experience before we can determine the true principles of any vocation. Dentistry, in its incipiency, was a comparative experiment in regard to its materials and manipulations; in fact, it was a pretension. Tooth pulling and bleeding were once followed by barbers and blacksmiths; and not infrequently the clergy, in their ministerial rounds, were wont to "pull and plug" teeth, after their sort, as a means of support. On account of these failures dentistry, if such it may have been called, was frowned upon by the medical profession, which, by the way, had a salutary effect in bringing about this great reformation.

Our profession is a progressive one, having outstripped all others, making more rapid strides than any other. Its self-reliance and independence enable it to stand upon its own merits; therefore the principles of dentistry, as now taught, can be fully established, and, when justly comprehended, need no pretext or necessity for a pretentious education. Light began to dawn, however, in 1820, when Dr. Leonard Koecker published the "Principles of Dental Surgery." He practiced in Baltimore and Philadelphia from 1807 to 1822. Then followed the first edition of Harris's "Principles and Practice," in 1830, by the immortal Prof. Chapin A. Harris.

As before stated, in the year 1839 the first dental college of the world was founded in the city of Baltimore, and on March 9, 1841, the first degree of D.D.S. was conferred upon Robert Arthur.

During this year the American Journal and Library of Dental Science sprang into existence. A society of dental surgeons was soon after formed, and at its second meeting the Journal was made the property of the Association in Richmond, Va. Two years after, another society was organized, similar to that of Baltimore; and in August, 1844, a third was formed in Cincinnati, O., known as the "Mississippi Valley Association of Dental Surgeons;" not long after, another dental college in the same city, to be followed by one in Philadelphia, Pa. State and local societies were formed all over the United States.

So salutary was the effect of these colleges and societies in disseminating correct scientific knowledge that the existence of the same is now recognized as indispensable to our profession.

In returning to our American dental literature, we can but casually glance at its early history. In 1822 Dr. E. Parmly published two volumes on dental surgery; also J. F. B. Flagg, M.D., of Boston, a work, "The Family Dentist." In 1825 Dr. S. S. Fitch published a very comprehensive work of five hundred pages, and a revision in 1835.

A poetical essay entitled "Dentology," by Solomon Brown, with notes by Dr. Parmly, came out in 1833. S. Spooner published a "Guide to Sound Teeth" in 1836. Prof. C. A. Harris's second edition of "Principles and Practice of Dental Surgery" was published in 1845. The same year he published the Dental Dictionary.

In 1854 A. Snowden Pigget, M.D., gave to the profession his work on "Chemistry and Metallurgy" as applied to dentistry.

About this time the *Dental Register*, of Cincinnati; *Dental Review*, of St. Louis; and *News Letter*, now the well-known *Dental Cosmos*, of Philadelphia, Pa., were published.

Books are steadily being published on dentistry—in fact, they are numerous, and of the best style of text. The authors are men of learning and experience.

Our colleges are numerous, and journals abundant, affording the choicest literature for the thousands of dentists throughout the civilized world, the enumeration of which would occupy too much time on this occasion.

The "American System of Dentistry" would make a fine textbook, and the library is not complete without the following: Black's "Dental Anatomy," Miller's "Microörganisms of the Mouth," Farrar's and Talbot's "Irregularities of the Teeth," Mitchell's "Chemistry," Evans's "Bridge Work," Kingsley's "Oral Deformities," Garrettson's "Oral Surgery," many dental journals, etc.

We have intimated that no profession has made more progress than dentistry from a scientific standpoint, and surely the manipulator's skill is of the highest type. So that he who is endowed with the necessary prerequisites need not be pretentious in this day of colleges, societies, and superb literature.

The day has been when there was some plausible excuse for faulty operations, and yet we have not reached the zenith of our glory.

The dead teeth, the diseased roots that once fell a victim to the forceps, can now, in the hands of the skilled dentist, be utilized and made subservient to the will of the patient, in the mastication of food. The bunglesome plate has been supplanted by the bridge. The lost portion of a crown can be restored to its former shape with cohesive gold; the cleft palate, so embarrassing to the unfortunate, by the nasal sounds, can be remedied by the obturator to a normal speech.

The many diseases of the oral cavity that used to disfigure the face, and produce death itself, can be avoided and prevented entirely. The spiral springs that seemed indispensable in retaining a denture are numbered with the things of the past, and the necessity of restoring the lost organs of beauty and mastication with the crown of the human tooth, the sheep or ivory, has long since succumbed to the porcelain, which rivals nature itself.

The dental engine, the great salvation of the spinal column, the great prophylaxis of torturing pains, has downed the old hand drill and the oft-used excavator. Yes, the coffer dam—God bless the inventor for its free use and utility!—has done away with the much-dreaded napkin and bibulous paper with its retchings and gags. O yes, and I remember the old blowpipe, through which I almost blew my brains in making the old gold plate. It too had to yield to science. The old-fashioned chair, over which the dentist formed the letter "S," is changed to one of ease and luxury.

Dentistry gave to the world anæsthesia. In fact, what has not the true principles of dentistry done? It has changed the bungling art into a learned science; the "carpetbagger" into a gentleman of polish and refinement, for such was once the style; the workshop into a parlor; dread and fear into ease and contentment. Yes, more like the Queen of Sheba, the half has not been told. The great wheels of dental science will move on and on, irrespective of other professions, which, notwithstanding their former anathemas and hatred, are now ready to accord us a recognition as a specialty of medicine.

All this has been accomplished by a persistent and determined effort to find the true principles, which were not the work of a day, a month, or a year.

In conclusion, let me to say to the young dentist, especially, that there is a goal yet to be reached by an inventive genius: a material for the restoration of carious teeth, that will far excel the stoppings of to-day, and a base for porcelain substitutes that will take the place of precious metals and modern plastics.

You have the advantage of the experience of those of riper years who have given you most cheerfully and unreservedly all they know of dentistry from a long experience, some of whom, I am proud to say, are in our midst—men whose forms are not so erect, with locks silvered by years of research after truths, freely given those young in the profession. Profit and improve upon these precepts. So be it.

DENTAL EDUCATION.*

BY P. D. HOUSTON, D.D.S., LEWISBURG, TENN.

Gentlemen of the Section of Oral and Dental Surgery, Nashville Academy of Medicine: It is my desire this evening to elicit a discussion on the subject of dental education. In determining what phase of the subject I wish to hear discussed, I would ask the question: Who are the parties in all this land and country that are, or should be, particularly interested on the subject?

Is there any one, who is capable of enjoying the use of natural or artificial dentures, who is, or ought to be, more interested on the subject than another? We unhesitatingly assert that every man ought to be interested to the full extent of his capability. The question then comes to every philanthropic heart, what can we do to best promote the interest in this great work of dental education? If the dentistry that is taught and practiced in this country is a genuine benefaction to humanity, then the more of it that is practiced the better is humanity, also the better is he who does the practice, and all are made happier. Let us notice for a few minutes our system of dental education, if indeed it may be called a system; we will admit that it is a system, though a crude one, but we have many noble and true-hearted pioneers in dentistry who deserve much credit for what they have done in the field of systematic dentistry. We claim that dentistry has made as much advancement in the last half century as any other branch of science or industry in this country, and yet we claim it to be in a crude state, and it needs the aid and special encouragement of every dentist as well as every one else to move on the system in the direction of perfection. Our country now abounds with as fine dental colleges as we think the necessity in the case at present demands. The young American of to-day who chooses dentistry for his favorite profession, if he is well grounded on the question of finance, has almost as fine opportunities to become proficient in the science as the world can produce and, I might say, as heart need desire. We follow him after he leaves the college, a full-fledged D.D.S.; with a heart brimful of hope he selects the best location he is capable of finding; has his office nicely arranged and everything is handy and convenient for the unalloyed bliss of dental practice. He himself is educated in dentistry; but if no one else is educated, what can he hope to accomplish? He has made good use of the opportunities he has had for an education in dentistry, and has invested not a small amount of money in it. But if those who may need dental work are not educated on the capabilities of dentistry, what can he hope to gain by his investment? The fact is, he finds that, in order to succeed, he must act as a teacher. After making a diagnosis of the case in hand, he must be able to teach his patient what is the most essential thing to be done in order to relieve him from present agony and promote his happiness in the future. He must educate his patient by giving him a lecture on dentistry, be it long or short. It is indeed astonishing to know how woefully ignorant are a great many persons, who are naturally capable of learning, on the subject of dentistry. For instance, there is a man in our town who has made a success in his life financially and is a good citizen, who has been known to be riding over the country on a cold Sunday evening, inquiring if a certain wench did not have some toothache bones. He wanted to get them and conjure away the toothache from some member of his family. How much worse are the people of Japan, India, or Ceylon? But you ask me why I do not educate that man. I freely would do so, but he does not apply to me. He thinks the dentist talks for his own benefit, and the most of dentistry that is practiced is a humbug, that any way if that old wench will lend him her toothache bones he will have the pain stopped, and it may be it will never return again. I am glad to know, however, that all persons are not so ignorant as this good old man. But I will venture to say that a great majority of the people in this country are woefully ignorant on the subject of the anatomy, physiology, and hygiene of the teeth. The average parent will tell you that there is no use of having the children's teeth looked at by the dentist; that they will soon shed those teeth anyhow, and they actually do not want to know the facts concerning their children's teeth; and when you begin your lecture to them about it, they turn off with a cold indifference which means to say you are talking for your own interest. But our day comes when they bring the child back and beg you to do something for its tooth, and tell you they have not had a good night's sleep in more than a week. The dentist will make an examination, and feel like saying: "Aha! did I not tell you so? but you thought I was talking for my own interest." So it is with adults. They will not speak to a dentist or even look at him for fear he will speak to them; and they go on suffering day and night until they think they cannot live in that kind of a mood any longer, and they conclude to have the offending member excommunicated. So if he should decide to patronize a dentist instead of a charlatan, there will be a fair opportunity to teach him in some of the capabilities of modern dentistry.

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* Read before a full meeting of the above-named society, October 17, 1894.

We know there are vast numbers of people in the world who are very ingenious and have skilled intellect in anything to which they turn their attention, and still they have no knowledge of dentistry. While the present system of education on the subject has made wonderful strides for good to humanity, we say that it is yet in its crude state, and much more might be than has been or is being done. We would say that we would not desire to lessen the availability of the present system in any way whatever. It is good—not only so, but very good—and seeing the results of it, let us attempt to reach perfection. Let us give the matter our study and be prepared to contribute to our county papers and literary journals generally terse, well-digested, and scientific articles which bear within themselves the solid ring of true philanthropy, and which cannot be gainsaid by sensible people. And again we ought to be prepared to enter the threshold of any and all of the seminaries in our country and lecture and display to the young minds the intellectual food that is most wholesome to them. Well, you are ready to say, "I do not like to impose on people a lecture that savors of selfishness, especially when not courteously invited to do so, and have my motives impugned." If you have true courage and intel-tellectual capacity, you will do it. Our teachers have not had their minds aroused on the subject, and will not think of inviting you to do so, but would willingly invite you if they knew you were ready and willing. I think it is our duty, and ought to be our pleasure to do this work; and we could do it if all were to study and apply ourselves and had the moral courage to go forward. When a man sows this kind of a crop he should not expect to reap it all; and some will not go to the expense of sowing it unless that were the case. You may be sure of one thing: if you sow a good crop with pure motives, you are sure to reap as much as you may deserve; sooner or later your reward will come. There are yet other means by which the people may become informed on this all-important subject, as one of the venerable friends of the Tennessee Dental Association has suggested a year or two ago, and that is to have the fundamental principles of the anatomy, physiology, hygiene, and the capabilities of operative and prosthetic dentistry taught in our common schools. I would suggest that a text-book be gotten up for that purpose, made simple, concise, and cheap, and let strong efforts be made to introduce it into all our public schools. It may be gotten up as an individual or coöperative enterprise. But in either case it should be gotten up and arranged so as to secure the commendation of our dental colleges and the hearty support of every dentist, as well as the recommendation of the most influential men of our country. I would suggest a book of about one hundred pages 12mo (or the size of the book on elementary agriculture), divided into chapters and sections, and questions suited for school children from ten to fifteen years of age placed either at the bottom of each page or in the back of the book. All technical names should be avoided, except where scientific accuracy requires their use. As the principles which will be taught in this work are of such universal application, and so transcendently important to the whole human family, it would certainly meet with a hearty welcome. If the children of our land were taught these principles, it would be of inestimable value to them. It would make the dental profession more pleasant and profitable. By understanding the hygienic principles of the teeth a great deal of money would be saved to the individual who might need dental work. The dentist would be saved from the necessity of lecturing so much to his patients, the patient would understand enough to know that the dentist was doing an honest job for him, and there would be more satisfaction for both parties, and it is surely the most efficient way of educating the people. Then why not everybody give all the possible aid and encouragement to such an enterprise, and thereby promote one of the best interests of our nation?

EXTRACTING.[*]

BY W. J. MORRISON, D.D.S., NASHVILLE.

My mind fails to conceive of a subject to present to you upon this occasion, which would be interesting to such a learned body of men as those who listen to the papers that are read before this Section, and I select this subject because it is in keeping with the author's condition produced by his inability to give even an interesting extract from the unlimited amount of knowledge that is within easy reach of the progressive practitioner; yet there is no operation performed by the dental surgeon in which more ignorance is displayed, as much injury done to the human race, and none upon which the average dentist prides himself more, than that of "yanking" out teeth, as he terms it.

If the public had been as well instructed in the care of the teeth and the hygiene of the mouth as they have been in reference to this horrible procedure, there would be little use for the millions of forceps that are manufactured annually. This conclusion was forcibly impressed upon me, within the last few days, by a conversation with some ladies in different parts of this State.

To illustrate what a fine dentist Lady No. 1 had, she said he had shown her a bushel of teeth he had extracted; while Lady No. 2 said her dentist had extracted a washtub full, and that they were thoroughly convinced that when a tooth once ached it should be extracted.

While we know that such proof of the practitioner's ability as a dentist is not the rule, it is to be regretted that the profession is encumbered with such a large percentage of men who pride themselves on their ability to extract teeth, yet never seem to think of asserting their knowledge and skill to relieve the sufferer and restore the offending member to a healthy condition. They will pet, coax, scold, and expatiate with a patient for an hour, to be allowed to extract the tooth "without pain" after the patient asserts that he does not want the tooth filled because filling is more painful than extracting.

There is a tremendous responsibility resting upon the teachers in our dental and medical colleges, along this line. The prospective D.D.S. and M.D. should be taught the important relation of the teeth to the rest of the system. They should be impressed with the function of the teeth in the proper mastication and insalivation of the food; for the first and most important step in digestion is the proper insalivation and preparation of the food for the gastric juices. Students should be taught that the extracting of one tooth is the functional loss of two.

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[*] Read before the Section of Oral and Dental Surgery, Nashville Academy of Medicine, October, 1894.

Then, attention should be called to the vital necessity of the retaining of the teeth to preserve the dental arch intact, by illustrating the tipping forward of the other teeth, and also the interruption of the flow of saliva. Another important point is the effect that the extraction of certain teeth will have upon the formation of the maxillary, not only as regards the individual, but also the effect upon the future generation.

When I consider these and the many other factors in connection with this surgical operation, and especially in connection with children's teeth, my conclusion is that at no time is the ability and good judgment of the practitioner put to so severe a test as to decide when to extract and when not to; for upon his decision rests either an inestimable benefit or an irreparable damage.

I regret to say at times we are influenced in our judgment by the patient, who asserts that unless we extract the tooth he will go to some one who will. I have known of cases where the young practitioner refused to extract the teeth of a patient because he knew that by proper treatment they could be saved; yet the patient was relieved of the teeth by an older and more eminent D.D.S., to the chagrin of the young man, who is ever afterwards considered by the patient as not being up in his business, from a financial point of view.

I would not be understood as depreciating the skill of an operator in performing the operation of extracting when necessary, anymore than I would disparage that of a gynecologist in sacrificing the child to save the mother when conditions require.

Selections. . . . .

SULPHURIC ACID FOR OPENING ROOT CANALS.

BY J. R. CALLAHAN, D.D.S., CINCINNATI, O.

It is seldom we see canals in buccal roots of upper molars, or in roots of lower molars, in which a drill can be used. Many times in bicuspids and lower incisors the roots are so flat and thin that drilling is dangerous, yet all these canals may be in such condition that we are compelled to open them for treatment and filling. There are canals that are constricted just at the chamber, sometimes so much so that they can scarcely be found, yet the canal in the root is large and should be opened. There are canals in curved roots and canals obstructed by osseous growths that, if not properly opened, would most likely cause trouble. It is with these difficult canals I wish to deal here.

It has been about four years since I began to open this difficult class of canals by using a twenty to fifty per cent. aqueous solution of sulphuric acid and the Donaldson root canal cleanser. To illustrate the method, let us suppose that we have an upper molar from which the pulp tissue has been removed. The palatine root, being large, can be prepared by any method you may choose. Let us suppose the canals in the buccal roots cannot be found. We would then place a pledget of cotton saturated with the acid solution in that portion of the cavity near the buccal roots, and seal it in the tooth for twenty-four or forty-eight hours. On the removal of the stopping, wash out with a dash of water from the syringe. On drying the cavity you will find it white and clean, with two dark spots in the vicinity of the buccal roots, showing where the canals can be found. Now we try to enter the canal with the nerve bristle, but find no opening. To make sure that we are not being deceived by a constriction, we take a bud drill and follow these stains a short distance. If we find no opening, or a very minute opening, too small for the bristle, we will feel justified in saying they need no further treatment; but if with our exploring instrument we find a canal, we will carry the acid to the canal by dipping the instrument in the solution, or by means of the pliers, or, better still, the latest pattern of the Dunn syringe.* Place a drop of the acid in the chamber, and with a

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*The Dunn syringe referred to is made of glass and rubber, with platinum or gold point.

No. 5 Donaldson canal cleanser pump the acid into the canal. The acid will soften the walls of the canal sufficiently to allow the broach to cut its way into the root, and will also thoroughly sterilize the canal and everything in it. No germ or spore can live in the presence of H_2SO_4 in the strength mentioned. The broach may scarcely enter the canal at first; but if you are persistent, it will be but a few minutes till the instrument will go quite a distance into the canal, and you reach the end of the root, where a much stronger resistance will be met.

The thickened cement at this point seeming to offer a greater resistance to the acid, the canal can be enlarged by using larger broaches, or if the root is straight the "Gates Glidden" drill will follow the canal just made. It is more than likely the apical foramen has not yet been opened. This can be accomplished, if desired, by drilling or by placing a small thread of cotton saturated with the acid in the end of the root and leaving it there over night, and then using the broach and acid at next sitting. After one or two trials you can readily see how crooked or obstructed canals may be opened in a few minutes, and the canal will be in condition for immediate root filling. It must be borne in mind that the rubber dam should always be in place before the operation is begun. The adjoining teeth may be protected by placing the dam on none but the tooth to be treated.

I confess that at first sight the application of so strong a solution as fifty per cent. looks rather heroic,* but four years' constant use has proven to me that there is little danger of injuring the tooth or the surrounding tissue if the operation be controlled by any sort of common sense. We do not hesitate to use arsenic or nux vomica, aconite, argenti nitras, cocaine, and scores of other poisonous drugs. We can have the action of the acid under perfect control. I always keep a saturated solution of bicarbonate of soda on the case, so that I may stop the action of the acid at any moment. In but few cases is it probable that the acid will go through the apical foramen in quantities or strength sufficient to have any corrosive effect, because neutralizing agents in the dentine will have materially weakened the acid before it can pass through the extremely small opening at the apex of the root. If there be an abscess present, the foramen is likely to be larger, and the condition of the tissues about the apex of the root will be materially benefited by the presence of the acid, even if in the full strength of the solution. In my mind there could be no better agent for the breaking down of the diseased tissues and the positive destruction of all germ life. A case in practice will probably illustrate the point I wish to develop: A lady, aged twenty-five or thirty years, who had been under surgical treatment for a large fistula at the symphysis of the chin, came to me at the request of the surgeon for examination, and treatment if I thought the case demanded it. By the aid of the electric light I located the trouble in the two lower central incisors. The pulp chambers in both teeth were opened. The canal in each tooth was so small they were practically closed. A drop of the acid solution was placed in the pulp chambers, and with a No. 5 Donaldson root canal cleanser was pumped into the canals. In a few minutes the instrument found its way through the root. The canals were then enlarged by using larger broaches, thereby establishing direct communication from the pulp chamber through the seat of the abscess and through the whole length of the fistula. Several drops of the solution were then pumped through the roots into the fistula, and made their escape through the opening at the symphysis. On the second day it was given the usual antiseptic dressing; on the fourth day the roots and fistula were thoroughly filled with chloropercha, and kept under observation for a few days. No signs of inflammation appearing, the patient was dismissed as cured. I do not believe the roots could have been opened in a reasonable time by any other method, and I believe that the acid was the best remedial agent that could have been applied at that stage of the treatment. The acid at first attacks the tooth substance vigorously, breaking up the lime salts, and corroding or changing the form of the organic substance and forming a new compound, thereby establishing a barrier to the further progress of the acid. Prof. J. S. Cassidy, in his valuable text-book, "Dental Chemistry and Materia Medica," page 77, says: "Sulphuric acid attacks the earthy portion, forming insoluble calcium sulphate (CaSO), and at the same time dehydrating the animal or gelatinous portion, which is mainly made up of carbon, hydrogen, and oxygen. These two latter elements are withdrawn as already alluded to, leaving the indestructible carbon as a residue, to be incorporated with the insoluble sulphate, producing thus a protecting covering to the unaffected parts beneath against further inroads."—*Items of Interest.*

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*Good results may be obtained by the use of weaker solutions, but my desire to present a ten-minute paper prohibits the mentioning of many details.

*PRACTICAL SUGGESTIONS.**

BY C. E. FRANCIS, D.D.S., M.D.S., NEW YORK CITY.

When listening to the usual discussions at society gatherings, or perusing the various articles published in our dental journals, an inexperienced practitioner would naturally feel himself puzzled to know how to best fulfill his professional requirements. So widely do the expressed opinions of even the most advanced members of our specialty seem to differ in theoretical speculation and methods of practice that it might seem a difficult matter to determine who are right and who are wrong, who are the safe leaders and who are blind guides. Many individuals are so prone to run to extremes, so fond of riding pet hobbies, that they can see no sense in any theories but their own, and acknowledge no benefits to be derived from other methods than those which they have adopted. It is extremely difficult for them to look with unprejudiced eyes or weigh with unbiased minds any advanced ideas or new suggestions, so natural is it for them to cling tenaciously to their fixed opinions or rut-worn notions. Indeed, some individuals will never acknowledge superior attainments in a supposed rival, nor be convinced that they themselves are in error, though overwhelming proofs stare them in the face.

So much of this spirit is manifested at society meetings—this one-eyed view of things—that many of the younger members of the profession despairingly ask: "What course shall I pursue?"

Dr. A., a worthy professor of operative dentistry in a reputable college, teaches his class doctrines which he considers soundly orthodox, certain ways of operating which he assures his pupils are the only correct ones; and he lays down the law according to his own interpretation in a clear and emphatic manner. Dr. B.. a distinguished member of the profession, who is called upon to lecture and clinic before the same class, demonstrates methods and states principles quite at variance with the teachings of the beloved professor, and the students are cautioned against adopting the erroneous ideas of those who see things in a different light.

The unsettled "sixth-year molar" question is as much a question of to-day as it was twenty years ago, and will probably remain a question for animated discussions many years to come. Instead of advising us to consider the circumstances connected with individual cases and treating each in the light of reason or according to sound, unbiased judgment, our ultra would-be leaders bid us go to this extreme or that.

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* Read before the Midwinter Fair Dental Congress.

In the care and treatment of deciduous teeth, and in methods of insuring health and permanency to the second set, we listen to assertions of men who advocate views that differ widely from each other. And so in regard to the expediency of making contour fillings; of cutting separations between the teeth in anticipation of caries; of saving exposed dental pulps; the treatment and filling of roots; the management of alveolar abscess, or the different stages of pyorrhea; the relative value of the various filling materials and methods of introducing them; the treatments of physiological defects, pathological disturbances, and lesions of every description. We all like solid arguments; we enjoy sensible criticisms and believe they result in much good, but mere dogmatic assertions, poorly sustained by reason or practice, and which will not bear the scrutinizing light of investigation, are confusing and often of little value.

The chief duty connected with the dentist's practice is to preserve human teeth, one of the main features of which is to stay the ravages of decalcification. Circumstances may not permit the dentist to do what he might to prevent teeth from becoming injured by decalcifying agents, which to a certain extent are continually present in the oral cavity. He must take cases as they come into his hands and do the best in his power to arrest the mischief.

This means that all decayed or decalcified portions of the tooth structure must be removed and the cavities filled with some suitable material that will protect them from further injury.

It seems hardly necessary in this enlightened period to suggest the manner of preparing cavities, for it is to be supposed that every faithful operator will thoroughly excavate such cavities as he intends to fill and carefully trim the cavity margins. He will also cleanse them by injecting water of a suitable temperature, and sterilize those that are much decayed with some antiseptic agent, then dry with warm air. This much is conceded. We furthermore presume that all desire to make good, substantial fillings, and on this point I propose to offer a few suggestions. Unquestionably, the best fillings are those that will most thoroughly seal and preserve the cavities that contain them for the greatest length of time. In the selection of a filling material certain requirements should be considered. Adaptability and solidity are the principal objects to be sought. Solidity, of course, is an essential feature; but adaptability is absolutely necessary in all cases. Many dentists, however, seem to imagine solidity the main feature to be attained, and give comparatively little heed to the thorough adaptation of the material employed to the walls of cavities. There is no single filling material that will serve the best purpose in all cases; and it has been aptly stated that good judgment is an essential material in the preparation of the cavities. Gold, tin, amalgam, gutta-percha, and the preparations of zinc are all valuable for certain cases, but each should have its proper place. We have all observed many instances where gold as well as amalgam fillings have proven failures. In what cases do most of these failures occur? and why do they occur? Do gold fillings give out because the ribbons of foil or the pellets of gold do not properly cohere together as they are forced into the cavities? Even on grinding surfaces of molars or bicuspids do they, as a rule, wear away from lack of density and thus become valueless? We think not. But where fillings of gold or amalgam give out, do we not usually observe that the margins of the cavities are again broken down by the process of decalcification and the stoppings undermined with decay? This is our belief; and furthermore we believe that in the majority of such cases the failures are due to a lack of adaptability of the filling material to the cavity walls, and this is a matter which it is well to consider. Many old-time soft gold tin foil stoppings have done good service for twenty, forty, and even sixty years—fillings, too, that were introduced before the era of our modern appliances; fillings condensed by hand pressure and with crude and clumsy instruments. No annealing lamp to make the layers of gold stick together; no rubber dam to exclude moisture; no mallet to aid in securing solidity. Even bibulous paper, prepared spunk, and other modern conveniences were unheard of. With the numerous facilities which the present day offers, the advantages of professional preparation which our fathers in dentistry scantily possessed, the opportunities of professional intercourse which they seldom or never enjoyed, the endless variety of modern appliances that tend to simplify operations and render them more complete, it might seem as if dentistry at the present time had nearly reached the point of absolute perfection. To be sure, great progress has been made in dental art, and operations are daily performed that are truly excellent; but for all this we must acknowledge that many, very many fillings fail to preserve for any considerable length of time the teeth in which they are introduced. Yes, many hard-packed and beautifully finished gold fillings, solid lumps of the precious metal that have been malleted with a will, and which their admiring builders have hopefully supposed would last for a lifetime, have within two or three years from the time they were impacted become undermined and loosened.

It is an easy matter to say that in such cases the operations lacked thoroughness, either in the preparation of the cavities or consolidating the metal; but dentists whom we have reason to believe naturally careful and thorough, and whose faithfulness is beyond question, have their share of failure.

We all admit that many individuals are negligent or careless regarding the care of their teeth, and are not sufficiently familiar with the use of toothbrushes and dentifrices. Then, too, some teeth are poorly calcified and lack strength, so are readily acted upon by acidulated collections. But this does not account for all cases where fillings give out.

We have all seen solid-looking proximal fillings where a small excavator would find an opening between fillings and cervical borders, and a fine point is not always needed to disclose such defects, for good-sized burs sometimes find room for easy entrance, and many of these in mouths kept in fair condition.

Are not a large proportion of these failures due to a lack of proper adaptability of the filling material? And is not a too free use of cohesive gold responsible for a goodly share of them? Cohesive gold foil has its place, and may be advantageously used for building out contour fillings, but it cannot be adapted to the walls of delicate teeth. It is sticky and stiff, offering much resistance by its rigidity when manipulated, consequently cannot be forced securely into every desirable nook or space within the cavity. In such cases the oral fluids are sure to penetrate around the borders and cause mischief.

It has already been intimated that the *best* fillings are those which seal most thoroughly and preserve for the longest period of time the cavities in which they are impacted. In cases where slight cavities are found on the surfaces of densely formed or well-calcified teeth at points easily kept clean, it is not a difficult matter to introduce fillings that may be counted on for permanency; but where we find fairly large cavities on approximal surfaces of teeth *not* well calcified the task is more difficult. In the last-named cases, if we hope for the best results, we need soft pliable stoppings that may be securely packed against the cavity walls without danger of disturbing or crushing their delicate margins, and which we are sure will neither contract nor expand when subjected to the tests of time. We are here limited to two materials from which to choose: either soft gold or tin foil. But for what may be considered as extreme cases, or where cavities are large and the walls chalky and disposed to easily crumble away, tin foil may be counted on as the safest and most reliable stopping. The peculiarity which tin possesses is its ready adaptation to the walls of such cavities. It shows even less rigidity in the process of manipulation than does the softest gold, consequently requires less force to condense it.

A new form of this metal was recently exhibited by Prof. Darby, of Philadelphia. It consists of thin shavings of pure block tin, which are very easily manipulated and possess a decided cohesive property without any show of rigidity. Still more recently Mr. E. Kearsing, of Brooklyn, one of the oldest and best-known manufacturers of gold foil, has succeeded in producing a foil made of refined tin which also possesses to a considerable degree this much-desired cohesive property. Either of these preparations can be readily consolidated with ordinary pluggers by hand pressure or any sort of mallet—the same as used for gold. The fillings can be built or extended to any desired contour, and when well condensed their surfaces are sufficiently hard to receive a smooth and brilliant polish.

So, gentlemen, without disparaging the employment of any of the various materials in common use for stopping defective teeth, all of which are valuable in their place, I desire to simply call your attention to the fact that pure tin, as recently prepared, is a most excellent agent for securing safety to frail cavity walls, and for preserving them without further deterioration or loss of tooth structure and probably for a greater length of time than any other material.

In conclusion permit me to state that in this very incomplete and hastily written paper I have endeavored to impress the idea that if we would render the best services possible to our patients it is well to take a broad view of whatever pertains to our practice. Instead of being governed by contracted rules, or closely adhering to our peculiar or old fixed methods to the exclusion of all others, let us be eclectic in practice, culling from the best sources, choosing that which is best fitted for each individual case under consideration. Then by pursuing a course of careful investigation, closely studying cause and effect, and watching the results of our various efforts, we will certainly be in a line of progress, and our achievements will give greater satisfaction to ourselves and to those for whose benefit our operations are intended.—*Pacific Coast Dentist.*

SHALL THE ENTRANCE STANDARD BE RAISED?

The effort to raise the standard of entrance to medical and dental colleges has been the topic of discussion in interested circles for years. The solution of this problem for the United States seems no nearer to-day than at any time within the past two decades. While this is true, the pressure in certain directions for a higher education has become so persistent and powerful that it seems necessary that the question should be discussed more thoroughly than heretofore.

There can be no antagonistic views held in regard to the general proposition that in proportion to an advanced educational training will be the capacity of the individual for further acquirement, but there must be room for disagreement in regard to the measures necessary to reach this desirable condition.

An advance by leaps and bounds is not healthy progress in any line of work or mental growth, and those who become impatient of results and would have the problem solved in resolutions in societies are not wise in their generation and, if not checked, become stumbling blocks in the way of real advancement.

At the last meeting of the American Dental Association, and also at that of the National Association of Dental Faculties, the question of a higher standard formed an important topic. From the proceedings of the former are quoted, on another page, the main points of the report of the Section on Education, together with the discussion which followed. The general remarks on the same subject in the Association of Faculties are not reported, but the resolutions introduced last year and laid over for action this, requiring for entrance to the first year physics and Latin, were warmly discussed and at first passed by a bare majority, to be laid on the table at the next session, on a vote of reconsideration.

The feeling manifested at both of these meetings indicates that a large body, perhaps a majority, of the educators of the United States are dissatisfied with the present condition of things, and are anxious for a change. This is encouraging if it be regarded in the light of aspiration after something better, but the possibility of attainment must always be the factor to be considered in any move, whether it be in the individual or in the community.

The Section on Education reported to the American Dental Association that it "would urge that the degree of Bachelor of Arts, or its equivalent, obtained from a reputable university, should be required."

If it were possible to enforce this, the result would doubtless be the practical destruction of every medical and dental school in this part of North America. In this country institutions of learning, classical, scientific, and professional, are not, as a rule, under the control of the government, State or national. Some few of the States have established universities and can regulate the standard, but this is so exceptional as not to be regarded as a factor in the calculation. It would no doubt be an excellent thing to have all educational institutions under the management of the central government at Washington, as is done in Europe, but are the people of the United States prepared to adopt this? Could it be carried out under the crude conditions of life existing in many sections? The answer, it seems, must be positively in the negative.

Unfortunately for the hopes of those who look forward to the day when the degree of Bachelor of Arts shall be required for entrance to the professions, fewer men holding this degree are entering those of medicine and dentistry to-day than heretofore.

Dr. J. M. Da Costa pointed out in his address before the Howard Medical Alumni Association that the percentage of college graduates in Howard fell from 53.9 in 1884 to 28.2 in 1892, and has been since declining. At the University of Michigan in ten years, from 1882 to 1892, the proportion in the Medical School at Ann Arbor fell from 10.6 to 9.4 per cent. At the University of Pennsylvania the proportion was 26 in 1890–91, and fell in three years to 20 per cent. According to the authority quoted, "sixteen medical colleges were last year without a single college graduate on their rolls."

While this is doubtless true, and to many is a discouraging fact, it does not mean, as it seems to imply, that the large majority, who had not college educations, were illiterate and incapable of professional instruction. The larger proportion of these had higher school training, and when not thus far advanced, it has covered the solid foundation of that of the public schools which, while not including the languages, furnishes an excellent basis for practical work and theoretical knowledge. It is not to be understood that this statement of fact means an opinion that nothing further is desirable; on the contrary, the writer is anxious for the period to arrive when it will be possible to secure a higher culture; but this condition, in his opinion, has not yet been attained.

When the public schools begin a training in the languages, including Latin, at the ninth year and continue this without interrup. tion to the seventeenth year, the professional schools can advance the present standard with safety to themselves and with justice to the students, and not until then.

Prof. Taft, in his remarks on the occasion referred to, states that "ten years ago more than one-half the practitioners in dentistry were very defective in their ability to use their native language." We would hesitate to credit the accuracy of this statement from any other man, but coming from one of his long and wide observation as an educator and journalist, it must be accepted as true in his experience. It, however, does not accord with the writer's observation of the portion of the dental profession he is familiar with. If, as he further stated, this is "not true to-day," it demonstrates a very satisfactory improvement in the methods of training the rising generation.

It is not possible to reach the statistics of all the dental schools of the United States, but it is interesting to note that in one of the large dental schools of Philadelphia the records show for the past four sessions that 63 per cent. entered from the public schools and upon examinations, and that 37 per cent. came from high schools and colleges. Whether this will hold good for all dental colleges in the United States we have no means of determining, but it is assumed the average per cent. will be nearly the same.

Taking this for granted, it implies that if the 63 per cent. were deprived of the privilege of entering these schools, it would leave so small a proportion of students that only those institutions supported by government endowments could be sustained. If, then, the law as proposed in the National Association of Dental Faculties be carried out next year, it will either end in the destruction of two-thirds of the colleges or will result in what is far worse, a persistent neglect on the part of schools to carry out its requirements. While some may regard the crippling, if not the total destruction, of the means of professional education as not a serious evil, we must so regard it in view of the necessities of the extended territory and increasing population of the country.

It must be clear, therefore, that European methods of preliminary training are not yet adapted to the comparatively new conditions here existing, and it must be conceded that the necessity for skilled practitioners overrides that for men of extended culture.

While it may be true in a general way that "differences in manipulative ability do not depend on degrees of general education," it is certainly true that in proportion to the development in a higher classical training is there an equal loss of manipulative ability. This must have been clearly manifested to all dental educators—certainly so to the writer.

It seems, therefore, that we must wait the slow development of time before we can hope to have a standard equal to our desires, or one that will draw a proper line between the inferior and superior development of the intellectual faculties. That this period will surely come as a professional standard there can be no doubt, but it can only be by the slow and healthy development common in all advanced civilizations.—*Editorial in International.*

IDEAL PORCELAIN CROWN.*

BY F. W. BLISS, D.D.S., SANTA CRUZ, CAL.

DOUBTLESS there is no branch of dentistry in which such marked improvement has been made during the last decade as in artificial crowns. There are a great variety of them—from the old porcelain crown, mounted on seasoned hickory, down to the present gold crown, so much used and very much admired by some of our patients who are anxious to wear a golden crown, though not set in jewels. A short time ago I purchased a Downey furnace for making porcelain crowns and bridge work; and, after making several crowns from the description given in his pamphlet, the thought came to me that an improvement could be made in the Downey crown, and the following is a brief description of it: Prepare the root by grinding it down nearly to the gum margin, using a corundum wheel that will leave a perfectly smooth surface. Bevel the anterior edge to an angle of forty-five degrees, reaching nearly to the pulp canal. Parallel the sides with Evans's root-trimmers, then fit accurately a platinum band made of No. 32 U. S. gauge to the root already prepared, trimming the upper part of the band to correspond to the contour of the gum, allowing it to reach a uniform distance of one line under the gingival margin. Now remove the band from the root and solder a piece of platinum on lower end of band two-thirds of its circumference, leaving the anterior one-third unsoldered. Return the cap just described to the root and adjust the loose anterior portion of the cap to the beveled edge. Then again remove the cap and solder the anterior portion in position. Select a plain plate tooth, color to match, and grind the upper portion to fit under the anterior part of the cap, also countersink the front upper edge of the tooth so that it will project anteriorly beyond the bottom of the cap. A piece of iridio-platinum wire, either round or triangular, is fitted to the root canal and a small hole is made through the bottom of the cap on a line with the canal much smaller than the wire; this wire is now driven through the hole in the bottom of the cap into the root canal; the tooth, already prepared, is placed in position and the pins twisted around the post, which is also in position. Now remove the whole, as above described, taking care to keep all the parts in position, and place it in the furnace without investment, and solder with pure gold. After soldering place the crown on the root to see if it fits properly. If everything is satisfactory, back up with Downey's porcelain body, put into the furnace, and fuse. In the first baking the body will shrink somewhat; more can be added, covering the anterior portion of the band and fusing again; the porcelain will fuse to the platinum as well as to the tooth, and make a strong and natural piece of work. If by miscalculation we do not get the proper shade of body, it can be ground off with a corundum wheel and other shades added until the desired color is obtained, and we will have an ideal crown.

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*Read before the Midwinter Fair Dental Congress.

In conclusion, I wish to say that, inasmuch as this crown is an improvement on the Downey crown and resembles it in appearance, I will point out the difference. The Downey crown depends on the porcelain largely for its strength. In this crown the metal part is all soldered together with pure gold, making it very strong and wholly independent of the porcelain for *its* strength.—*Pacific Coast Dentist.*

DR. G. V. BLACK ON AMALGAM.

We have heard pro and con of this theory of electrolysis for a good many years, and it has been a good many years since I settled upon a conviction on this subject, which I must say very nearly fits in with what has been said to-day. My observation has been that it cuts but a very small figure in this matter of amalgam and gold fillings because there is another principle that comes in almost as soon as the fillings are made which counteracts this action, and that is oxidization of the surface of the amalgam filling. An amalgam filling, the surface of which is fairly well oxidized, is a complete bar to electrolysis, so that the whole matter falls to the ground. So long as a clean surface of the metal is exposed to the action of fluids we will get this electrolysis; but when the surface of the filling becomes blackened, so that the metal itself is not exposed to the action of fluids, then the electrolysis must cease. The same will be true also in the electrolysis that may be formed by the action of the fluids *in a tooth* upon metal, and that has been the secret of the safeguard that is thrown around amalgam fillings that have blackened the teeth so completely. The action of electrolysis, or some other action, in many of these cases has caused disintegration of the metal next to the walls of the cavity until there is no longer any metal exposed to the action of these fluids, and the action ceases. Then gradually the coloring matter formed upon the filling is carried more and more into the tooth and it is deeply stained, but the tooth is not decayed. When we throw this feature of the matter along with the principles that have been announced, we find we are in much less danger from electrolysis than we would suppose.

As to the first action. Suppose the filling remains bright. Well, if the filling remains bright, contact is necessary to prevent electrolysis. Is seems to me, at the present day we are hardly excusable, under ordinary circumstances, in making fillings that do not make proximate contact, and if this proximate contact is made it stands as a safeguard against electrolysis in case the filling remains bright, but I may say, if electrolysis occurs, the filling is not apt to remain bright.

Before I return to Dr. Pritchett's paper, I will first say a few words regarding the experiments of Dr. Wedelstaedt, to which reference has been made. I have had a good deal of talk with him at various times. His experiments have opened up a field of thought that promises great value, as I take it. He spent quite a little time with me in matters of study, and he is developing quite a good deal of energy.

This shaping of cavities, as his experiments seem to point out, shows that the mere form of the cavity is important as to leakage, and this holds just as true for a gold filling as for an amalgam filling. I believe there is a principle involved that will be developed in the future, and in which we will find very much to encourage us in filling teeth—in other words, it is difficult to fill with any material a cavity that is in the shape which you see represented on the blackboard so that it will not leak. If they are in this shape [illustrating], we have a better chance. That is the point. The experiments of Dr. Wedelstaedt were undertaken, I may say, after a very long and careful discussion of the forms of cavities with reference to the making of water-tight fillings. Dr. Wedelstaedt is completely surprised with his experiments, and I think the work will be of importance to us in the future.

Where should we use amalgam? Should the patient make the choice? I should say no, and yet patients sometimes have a mind of their own. But by judicious management much of this can be controlled, and much of it cannot perhaps. But the operator should have due regard to the infliction of financial injury upon the patient, and if the patient finds that the operator exercises care in this matter, it will strengthen the operator's hold upon the patient very materially. Consult with your patient about this matter of cost, remembering that a dollar is of very much greater value to some persons than it is to others. and we will have very little trouble, I think, on this score. We find by consultation that it becomes our duty to make amalgam fillings for some patients, while with others, under similar conditions, we should make gold fillings. Often it becomes a matter of duty on our part to save patients expense as far as we can. Here is a girl who is making her living by teaching or some other vocation, and money is very valuable to her. The saving of a few dollars in the filling of her teeth she appreciates, and values your services, and it is an important consideration. This is one of the places and one way in which we may determine the use of amalgam. But in such places, remember all of you younger men particularly—I may say, the older ones, too—that while you are giving a cheaper filling material, you should not be giving any less careful service. [Applause.] Indeed, I may say that the average of my amalgam fillings consumes as much time and care as my gold fillings. There is the same preparation of cavities and the same care in the formation of contour as in gold filling. The patient must be dismissed, must return the next day or within a very few days, and then the same care is exercised in the final forming, finishing, and polishing of the filling. So by the time we are through, the amount of time is almost as great as if a gold filling was made.

There is another place where we can use amalgam fillings effectively and where they should be used, and that is where we have cavities so large that there is danger to the peridental membrane from the amount of malleting necessary to make a good gold filling. We can use amalgam in these cases with advantage. We had better use amalgam than to run the risk of ruining a tooth by injuring the peridental membrane. I have injured teeth in that way. I have had some absorption of roots that I could attribute to nothing else. I still build pretty large gold fillings, and we can do so safely.

There is another point with reference to the use of amalgam that

I will speak of—that is, in those cases where we desire to put crowns on roots that are decayed badly, scooped out considerably, or are very short. We may use amalgam there effectively in lengthening the root. In some of those cases where there is a portion of the root yet remaining, sufficient to place a band upon, we may excavate the root carefully, extend the root with amalgam to increase its holding power for a gold shell, either for a bridge or crown. In cases still worse we may make a band of very thin platinum plate and fit to the root nicely and fill inside the band with amalgam and make it very firm. A gold shell is then put on over the platinum band in the same way as over a good root. In teeth that otherwise would be of no use whatever, this can be very well accomplished. I think we can make these teeth stronger by this method than by any other. For a number of years I have been using a band of thin platinum filled with amalgam in this way in a good many instances where it would be impossible, so far as I could see, to construct a crown in any other way with any hope of its standing. Thus far I have not had a failure. But they will come soon enough perhaps. In such work we must take chances. The dentist should take chances. He is not doing his duty if he does not take chances. Here, for example, comes a gentleman fifty years of age with a lateral incisor decayed, the root badly perforated along the pulp canal, and the crown has toppled off. One patient came to me a short time ago with a very bad root upon which he had worn a Logan crown. By means of a thin platinum band, working it down about the root, fitting it, getting the amalgam packed firmly into it, I succeeded in forming a firm hold for a crown that will serve him for a number of years. I took chances, I will admit; but when that crown is gone he will have a better chance for bridging than he would have to-day, and whatever benefit he has from the use of the crown is that much gain. The expectation should be explained to the patient in either crown work or bridging. Expectancy, in these cases, is a good term. It should be discussed with the patient in all of these cases.

Dry and sterilize cavities before filling. With reference to this, I will say I do not want to dry the cavity before I fill it, and before I finish excavating it. I do not want to sterilize the cavity, with all due deference to Dr. Pritchett and any one else who does it. In the first place, I do not want to dry the cavity before I fill it, because part of my excavating is done with the cavity dry. If I do some of it while the cavity is moist, when I finish excavating the cavity is dry. I want to put the material against the walls of the cavity in exactly the condition they were left by my instrument. No moisture, nothing to come in contact with them after I have trimmed them, nothing to sterilize it or anything of the kind. I want to cut until I have got strong, healthy tissue, and when I have done cutting I put the filling material against the healthy tissue just as I cut it. I believe it is the best way to do. We cannot sterilize the cavity with anything whatever and have the walls afterwards in as good condition to receive the filling as before. A tooth has a good deal of water in it, and we cannot remove much of it by any form of drying. If we do, we run great risk of serious injury to the tooth, for, as a matter of experiment, I find I cannot half dry teeth without danger of cracking them. There is no danger in drying them with cotton. Since some experiments I have recently made, I am compelled to feel that there is danger in drying teeth by heat.

The Perry separators serve well to fix a matrix, and the matrix used by Dr. Pritchett is a most excellent one. Make it thin. I prefer brass which is a little stiffer, annealing it at the time of using it. Having my rolling mill always at hand, I make it as thin as I want it. Before you screw up the separator, slip in the matrix in the position you desire, so that the points of your separator will grasp it; then go ahead and separate your teeth. Your separator holds the matrix. Then you may fill and contour as you please. When you are through, loosen your separator, lift it off, turn out the free ends of your matrix, slip the separator on again with the matrix between the jaws. Lift the teeth apart just enough so that your matrix is loosened. Lift it out. In this way you can contour with amalgam perfectly, and with little trouble.—*Transactions of Illinois State Dental Society.*

A REVIEW IN BACTERIOLOGY.

At the last meeting of the British Medical Association the President, Dr. Fox, in his able address on the "Medical Man and the State," alluded to some of the more recent advances in medical science during the last few years, prominent among which was the subject of bacteriology. He said: "It is in this realm of investigation that our profession has given some of the best services to the State." We would like here to recall some of these services and their practical application both in preventing and relieving suffering.

During the past few years the investigations on enteric fever, typhus, plague, diphtheria, cholera, pneumonia, phthisis, tetanus, glanders, and abscess have to a great extent reorganized preventive medicine and caused a great change in the treatment of those diseases.

The investigations of M. Pasteur have brought the death rate in rabies down to less than one per cent., and Pasteurian institutes are now established in India, Germany, Austria, France, England, and America. As a result of the researches of the same great scientist anthrax among sheep is being stamped out by a system of inoculation of an attenuated virus, rendering the animal immune.

Sir Joseph Lister's great discovery (at first only problematic, but now a household word), when applied in the various branches of surgery, has not only rendered possible many operations hitherto never attempted, but has also saved thousands upon thousands of lives in the ordinary operations and application of surgical treatments. It is now demonstrated that abscesses caused by staphylococci have a tendency to remain localized, while those due to streptococci are followed frequently by metastatic abscesses, as in erysipelas, puerperal fever, and ulcerative endocarditis.

The researches of Koch and Fraenkel, the representatives, as it were, of the two great schools in Germany, have revealed the tubercle bacilli and the pneumococcus, established the fact that the diseases tuberculosis and pneumonia are due solely to specific microorganisms which are capable of being cultivated, and on reinoculation of again producing the disease in question, thus proving beyond any doubt the contagiousness of these diseases and the necessity of proper isolation and disinfection. The discovery of Koch, by which he hoped to destroy the tubercle bacilli in the human subject, while not proving as satisfactory as at first expected, yet marks a great advance toward the desired end, having, as it has, a decided curative action on all tubercular skin affections.

Although typhoid fever has been demonstrated as a disease due to a specific bacillus, yet in this disease we find numerous other microörganisms accompanying, such as streptococci pyogens and the staphylococcus aureus and albus. What part they play in the disease is accounted for by several authors in several ways, but none is generally accepted; in fact, the whole matter is deeply shadowed by mystery, and as the question is receiving at present the attention of one of Germany's most noted pathologists some new and valuable light is being anxiously looked for.

The Pfeiffer bacillus is now accepted as the actual cause of influenza, and it might here be interesting to note some of the facts connected with the life history of this important organism. It is most difficult to cultivate, will grow only on blood agar, and will not affect any of the lower animals. It grows only between 23° and 42° C. It will not live in a moist state out of the body; it is killed by drying; it has no spores, consequently it cannot be preserved or propagated outside the human body at ordinary atmospheric temperatures. It affects the respiratory tract only—is never found in the blood—consequently the only source of infection possible is from the respiratory tract. One attack of the disease renders immunity only for a limited time, and this explains with apparent clearness the reason this disease spreads so rapidly, and consequently as rapidly ceases and in a certain time again reappears.

The germ source of many skin affections has been firmly established, consequently the more recent remedies in dermatology have been in the line of antisepticism. Dr. James Harrison, in his address before the Dermatological Section of the British Medical Association, said: "Bacteriology will not account for, will not explain all phenomena; but look how much light it has thrown upon some forms of eczema, porrigo-contagiosa, boils, carbuncles, acne, lupus, and other skin manifestations. Thus certain skin diseases, hitherto considered incurable, are now relieved and prevented by the treatment so revealed."

It is in diphtheria that the most recent discovery has been made, which is of vital importance, more especially as it is expected not only to reduce greatly the high mortality already existing, but also to prevent the spread of the disease by a system of inoculation producing immunity.

This new remedy consists of an antitoxin prepared from the diphtheria bacillus by a special process, discovered by Koch, by which an animal is rendered immune to the disease by being inoculated with the diphtheria bacilli. He found that the serum of the blood containing the antitoxin possessed the power of not only destroying the organisms when injected in others suffering from the disease, but rendered those not suffering immune to an attack.

A case reported in the *British Medical Journal*, page 326, is one of many exemplifying the wonderful action of the antitoxin. The case was by two eminent physicians pronounced of a very severe type. Klebs-Loeffler bacilli were found in the throat; 8 m. of antitoxin were injected in the muscles of the thigh; in twenty-four hours the membranes were looser, with undermined edges; and in forty-eight hours the membranes had almost all come away, the nasal discharge had ceased, and convalescence had practically begun. Many cases are reported as satisfactory as this, and before our next issue we hope to be able to report some cases treated in this way in this city.

Those of our readers who take an interest in the practical application of bacteriology will at once perceive that the day for this science, which Lord Salisbury describes as "the most sober, most absolute, and most positive science of medicine," is just dawning, and ere the sun has well risen the present system of treating infectious diseases, both medicinally and preventatively, will have been revolutionized.—*Ontario Medical Journal.*

DEATH IS NOT A GRIM MONSTER.

Familiarity with death is apt to alter one's earlier conceptions of it. Two ideas are very generally accepted which experience shows to be false. One is that the dying usually fear death, and the other is that the act of dying is accompanied by pain. It is well known to all physicians that when death is near its terrors do not seem to be felt by the patient. Unless the imagination is stimulated by the frightful portrayal of the supposed "pangs of death," or of the sufferings which some believe the soul must endure after dissolution, it is rare indeed that the last days or hours of life are passed in dread. Oliver Wendell Holmes has recorded his protest against the custom of telling a person who does not actually ask to know that he cannot recover. As that loving observer of mankind asserts, so must every one, who knows whereof he speaks, assert that people almost always come to understand that recovery is impossible; it is rarely needful to tell any one that this is the case. When nature gives the warning, death appears to be as little feared as sleep. Most sick people are very, very tired; sleep—long, quiet sleep—is what they want. I have seen many people die. I have never seen one who seemed to fear death, except when it was, or seemed to be, rather far away. Even those who are constantly haunted, while strong and well, with a dread of the end of life forget their fear when that end is at hand.

As for the act of dying—the final passage from life to death—it is absolutely without evidence that the oft-repeated assertions of its painfulness are made. Most people are unconscious for some hours before they die; and in the rare cases where consciousness is retained unimpaired until a few minutes before the end the last sensation must be of perfect calm and rest. It is worse than cruel to add to the natural dread of death which oppresses the majority of us while in good health the dread of dying.—*Scribner's.*

Brief Gleanings. . . . .

FITTING BANDS TO ROOTS.

The increasing demand for a legitimate employment of crown and bridge work as a means of substitution where teeth have been lost, calls for the closest attention to all of the details connected with the work. The perfect fitting of bands to roots is one of the most difficult and important steps in the process of constructing crowns. Nature sometimes seems to tolerate bands whose main feature of distinction so far as fit is concerned is their misfit. And yet again nature often seriously rebels against bands which have been adapted to the root with the greatest care the operator could command. The lesson is, that in doing the very best we can we are doing nothing too well, and a careful study of each case under treatment is necessary to insure favorable results. Usually the removal of the enamel around the neck of the tooth will simplify the operation of fitting the band, but often even then the outline of the root in its circumference is such that the greatest care must be exercised to gain a perfect fit. The constrictions on the sides of roots, such for instance as the concavity on the proximate surfaces of bicuspids, are too often overlooked. In some cases this concavity is greater toward the root than at the neck of the tooth, and this results in a space between the edge of the band and the root, even though the band may appear to fit the neck of the tooth perfectly.

Slight imperfections of this nature are probably present oftener than most crown makers imagine, and every precaution should be taken to avoid them. A good practice to follow when the crown is finally adjusted is to go around the lower margin of the band with a burnisher, or what is better where it can be used a plugger point, and gently tap the edge of the band to the snuggest possible fit. It will sometimes be found that the extreme edge of the band will yield slightly under the force of the plugger and hug the root of the tooth a hair's breadth closer, even when it had been supposed that the best possible fit had previously been obtained. The gain of even the thickness of a piece of note paper in the close adaptation of a band to a root may mean much in the final outcome of the operation.—*Editorial Review.*

INJURIOUS RESULTS OF WEARING RED RUBBER PLATES.

I THINK I can indorse partially, and perhaps wholly, what Dr. L. P. Haskell says in his article in April *Items* in regard to absorption of the aveolar process from the long wearing of rubber plates, yet black rubber will perhaps cause as much absorption, as I regard the trouble as the result of rubber being a nonconductor. Yet I must say that in a practice of over twenty-five years I have failed to observe the constitutional effects he mentions, though I have seen patients who imagined, and the belief fostered by their physician, more particularly if a homeopathic one, that they were being injuriously affected by poisonous rubber, when it was the kind that contained none; or if the kind, the trouble all came from simple mechanical irritation, easily remedied. There is nothing, however improbable, beyond the vivid imagination of some people, as witness the "yarns" people tell of what they experience for years afterward from inhaling gas or ether. And it may be remembered what the "all gold" operators used to say of the evil effects following having teeth filled with amalgam, such as salivation, necrósis of jaw, sores on the face or neck, warts, and ingrowing toe nails! Homeopathic physicians talk such "rot" now about rubber plates and amalgam. And remember what used to be said of the fearful results from having gold and amalgam come in contact in a tooth. It may look like presumption to disagree with Prof. Haskell, yet the coloring that makes the red rubber, and what is used in celluloid plates, is not the same.

I cannot but smile at the credulity of the woman he cites as having her throat made sore by chewing gum made from dental rubber. No chewing gum is made from dental rubber. People easily believe things they like to believe.—*Items of Interest.*

FOR acute pericementitis I have used a hot pack on the neck and side of the face with three or four thicknesses of heavy toweling wrung out of hot water. At the same time I give one-tenth grain calcium sulphide, one-tenth grain every ten minutes for the first hour, every fifteen for the second hour, and one every half hour for two or three hours longer. To arrest pain at night use

R.	Acetanilid	gr. viii.
	Syr. simple	drms. ij.
	Spir. frumenti	oz. ij.

M.—Sig. Take one-half the above at 6 or 8 P.M., and the remainder at 10.

—*Dr. A. W. Harlan, in Review.*

AN ELECTRIC FURNACE FOR BAKING PORCELAIN.

After working for a number of years, Dr. W. H. Taggart, of Chicago, has perfected a furnace for baking porcelain by electricity. This furnace is to be entirely automatic in its working, so that when the apparatus is set it will automatically control and regulate the heat, and after the required number of minutes will break the circuit, making it impossible to overbake the porcelain. In other words, it will be as automatic and accurate as the modern time and heat regulating vulcanizer.

The one thing more than all others that has kept porcelain work from taking a prominent place in dentistry has been the fact that there was no suitable furnace for this work. A number of furnaces are on the market, but they are all open to one or another of the following objections: "gasing" the porcelain, excessive consumption of fuel, thereby heating the laboratory, or unpleasant noise from having to force combustion by a blower. All these objections are done away with in this electric furnace, as all that is necessary to do is to connect the cord with an ordinary incandescent light socket, and the highest fusing porcelain can be baked in from three to five minutes after the muffle is white hot. This takes about ten minutes, and all can be done while the furnace is held in the bare hands. As there is no combustion, there can be no gases to mar the beauty of the porcelain, and no excessive heat or noise. It would seem as if this process will almost revolutionize the making of porcelain for dental purposes, as well as for jewelers and enamelers.—*Review.*

Dr. L. C. Custer, of Dayton, O., is working at the same problem, and his recent clinic before the Ohio State Dental Association is spoken of as very satisfactory. That this work is to be more generally used in the near future is assured, and that it will elevate mechanical dentistry should encourage the profession to take hold of it and urge its use.

COME TO OUR ARMS.

"DENTAL colleges are like individuals, careful or slovenly, just as they happen to be manned or officered. A great improvement could be made in various portions of the country if colleges were endowed."

Many colleges stand with open arms, ready to receive endowments to almost any number of hundred thousand, and will not be particular who the donors are, either; and we guarantee that all who have donations to make can be accommodated.—*Dental Review.*

THE late Prof. Billroth's successor is to be Prof. Gussenbauer, of Prague, instead of Prof. Czerny, as stated in the *Journal* for July. The latter's refusal to accept the Chair of Surgery is said to have been partly due to a misunderstanding.

THE TASTE OF TURPENTINE

is said to be thoroughly disguised in the following combination:

Oil of turpentine	2 fl. drs.
Glycerin	1 fl. oz.
Mucilage acacia	4 fl. drs.
Peppermint water, to make	8 fl. ozs.

—*Pharmaceutical Era.*

SOLDERING ALUMINUM.

The soldering of aluminum, which has long been a difficult problem, has been recently solved. By sprinkling the surface to be soldered with chloride of silver, and melting down, the soldering is effected simply and satisfactorily.—*Ohio Journal.*

THE HEATHEN AND CORSET WEARING.

Mrs. Annie Jenness Miller relates the following: "A missionary returned from Turkey once told me that a Turkish woman told her that she never knew what it was to be sick until she became a Christian and wore corsets."

A GERMICIDE.

The investigations of Drs. Abbott and McCormick, of the Johns-Hopkins University, show that a solution containing seven per cent. of acetic acid is more effective as a germicide than bichloride of mercury.

Let us not boast. While there are some below us, there are many above us; and what we are is insignificant compared to what we can be. What we have done is little in comparison with what we should have done; and what we have done to weaken and dwarf and belittle ourselves is a shame. Because we are a little above many, it will not do to stand aloof with the Pharisee, and thank God we are not " like other men—nor even as this publican." If we take an inward view, we shall hardly have arranged our phylacteries in self-complacency before we shall be smiting on our breast with the publican. It is pride that shuts our eyes to our faults and failings, and blinds us to our insignificance. Self-abasement better becomes us than egotism, the pursuit of wisdom than self-righteousness, and a pure character than hypocrisy.—*Editorial in Items of Interest.*

A pivot tooth which, for durability, I consider second to none, is made by using silver for pivot and backing, and soldering with silver solder, and setting with cement mixed thin and amalgam soft, about equal parts, and finishing the part exposed to fluids of the mouth with amalgam only. The amalgam unites with silver only sufficient to make it all alike one piece of metal, while the cement setting quickly avoids any danger of displacement of the tooth.—*Domestic Journal.*

A Mouth Powder for Teething Babies.—Monti (*Wiener klinik-1892*) says that by using the following powder and a soft brush teething can often be made easy.

R.	Magnes. carb.	oz. j—gr. xvi.
	Cretæ albæ,	
	Sodæ salicylici, āā	oz. iij—gr. xlv.
	Ol. menthæ piper	gtts. vi. M.
	Ft. pulv. subtilissimi.	

—*Southern Dental Journal.*

"No living germ can resist the antiseptic power of essence of cinnamon for more than a few hours," is the conclusion announced by Mr. Chamberlain as the result of prolonged research and experiment in M. Pasteur's laboratory. It is said to destroy microbes as effectively, if not as rapidly, as corrosive sublimate.—*Hygienic Review.*

A useful device to keep the flask, during vulcanizing, off the bottom of the boiler is to put an ordinary upholsterer's spiral spring in the vulcanizer. Mr. Butcher, who tells us of this plan, says that it keeps the flask clean, enables it to be easily removed, and prevents the contents getting burnt.

Coryl.—A new anæsthetic. It is a mixture of methylic and ethylic chlorides. While methyl chloride boils at 27° C. (17½° below zero, F.), coryl remains liquid at zero, C. It has proven of great value in dental practice and minor surgery.—*National Druggist, February 1, 1893.*

All the States and Territories now have dental laws except Alaska, Idaho, Indian Territory, Montana, Nevada, and Utah.

A man "too busy" to take care of his health is like a workman too busy to sharpen his tools.—*Selected.*

Extracts. . . . .

ANÆSTHESIA AS A DENTAL DISCOVERY.

REPORT OF REMARKS BY DR. JAMES TRUMAN AT THE WELLS MEMORIAL BANQUET.

Dr. Truman began his remarks by alluding to the story of Hans Christian Andersen of "The Ugly Duckling," and compared this experience with that of dentistry. It was born late into the professions. It had undergone contumely and criticism, but nevertheless it had grown and developed—if not into the beautiful and graceful swan, had, at least, advanced into the higher walks of professional life. This, he conceived, was demonstrated in innumerable ways, but in no one more striking than the fact that fourteen States were represented at this banquet. When this was remembered as meaning personal sacrifice to all and days of travel to many, it proved to his mind that the dental profession was beginning to learn the great lesson of what is meant by professional spirit, and this evidence rejoiced his heart on this occasion.

He elaborated on the work of Horace Wells: his unselfishness; his desire to spread this blessing broadcast into "the greater world," as Goethe loved to call it.

Horace Wells was the discoverer of anæsthesia. When Dr. B. W. Richardson, of England, in a recent article in *Longman's Magazine*, attempted to tear the mantle from Wells's shoulders and place it on Sir Humphry Davy, he made the great blunder of his life.

Dr. Truman then quoted from Richardson's account of the condition of surgery just prior to the introduction of anæsthesia. The anxiety of the surgeon, the horror of the students, and the terror of the patients were given by Dr. Richardson with a vividness worthy a master; also a graphic account of the reception of the first news received from Massachusetts Hospital, and of the first operation performed in his presence in England; and yet, at this time, England had forgotten that Davy had ever mentioned nitrous oxide in connection with the amelioration of pain.

Dr. Truman compared this work to other discoveries, and spoke of the inspirations floating in the mental ether of the world, and falling like the dews of heaven, as in the parable, some on rocky soil, some on poor, and others on fruitful soil. It fell on Priestly, and there was no germination; it fell on Davy, and ended in a weakly plant, a dream; it fell upon Horace Wells, and the plant grew, to the comfort and happiness of the nations.

Dentistry, in his view, had not reaped much benefit from this discovery. When Horace Wells lived and worked this profession was in a transition state. Anæsthesia was important then for both patient and operator, but dentistry has now far outgrown this condition, and beyond the necessity of extracting teeth to the extent then required by existing knowledge.

He said we might well adopt the old Delphian idea and hang the "leaden forceps" in our temples, our offices—an emblem to us that teeth are not to be removed until such an instrument could extract them.

He then pictured the horrors of the battlefields of past centuries, the terrors of the hospital, and the sufferings in the accidents of life, and said: "Who can translate these into words suitable for modern comprehension? The wail of ages was voiced in the garden of Gethsemane when the great Master of human thought, in anticipation of the cruel agonies of the cross, cried aloud: 'Father, let this cup pass from me.' Eighteen centuries passed into oblivion, and there came no response, but near high noon on the nineteenth, in the New World of Columbus, in a humble home at Hartford, a 'still, small voice' was heard sounding above the wilderness of suffering; it was wafted over the deep waters; it echoed and reëchoed in joyous acclaim throughout the world, 'Lo, the cry of agony from the surgeon's knife is silenced forever!' We cannot deify thee, but we give thee most hearty thanks, and in our heart of hearts we enshrine thee, O Anæsthesia, goddess of our modern civilization, though not the firstborn, the loveliest of all the children of discovery, in this our nineteenth century."—*International Dental Journal.*

Editorial. . . . .

THE MEMORIAL CELEBRATION OF THE FIFTIETH ANNIVERSARY OF THE DISCOVERY OF ANÆSTHESIA BY HORACE WELLS.

On the 11th day of December, 1844, Dr. Horace Wells, of Hartford, Conn., discovered by an experiment on himself, that a tooth might be extracted without pain, by first inhaling nitrous oxide gas, and on Tuesday, December 11, 1894, the American Dental Association celebrated the fiftieth anniversary.

An audience of about nine hundred, the larger portion of whom were students of the three dental schools of Philadelphia, assembled in the Young Men's Christian Association hall at two o'clock, where the programme prepared by the special committee from the American Dental Association was carried out.

Dr. J. D. Thomas, of Philadelphia, Chairman of the Executive Committee, introduced Dr. J. Y. Crawford, President of the American Dental Association, who was to preside.

In a brief manner Dr. Crawford stated the history of the occasion, which he spoke of as the "celebration of the human family's emancipation from pain," and introduced Prof. Thomas Fillebrown, of Harvard University, who read a paper on "The History of Anæsthesia," of which the following is an extract taken from the *Philadelphia Press:*

"Great discoveries," said Dr. Fillebrown, "do not burst forth with suddenness. Such was the case with this great fact of practical anæsthesia. Old nations sought it, and died without it, and modern nations did without it until Horace Wells's discovery. Insensibility from drugs was known many years ago. The ancients had it. Homer speaks of a wine of health, and Pliny and Apulieus both refer to the use of mandragora. The Chinese had in the third century a wine of hemp; ether was known in the thirteenth century, and in 1825 Girardin read a paper upon its use as an anæsthetic before the Paris Surgical Academy. In 1800 Humphrey Davy suggested that anæsthetics might be used in surgery. Protoxide of nitrogen was discovered by Priestly, described by Davy, and applied by Wells.

"Sulphuric ether was discovered in the thirteenth century, named in the eighteenth, and applied in the nineteenth. Since 1816 its action had been known, and it was but a step to surgical anæsthesia; but a step no one dared to take until Wells.

"In 1844 Dr. G. Q. Colton was delivering popular lectures on chemistry, administering laughing gas to the audience. On December 10, of that year, Wells took the gas himself, and was struck with the idea that it might be used as an anæsthetic." The speaker then referred to the subsequent private experiment, when Wells, after taking laughing gas, had a wisdom tooth extracted by Dr. Riggs without pain.

"This event was the source of anæsthesia." Then was described the controversy that followed the discovery and the literature that was written upon the subject, literature much of which has since proved useless. After Wells had the memorable tooth extracted he went to Boston, and while there spoke to Dr. Morton about the subject, afterwards lecturing to the Hartford medical students upon his discovery. He was met with ridicule, however, and went home in disgust. His discovery was first credited by the Paris Medical Society to Prof. Jackson and Dr. Morton, who commenced the use of ether as an anæsthetic after Morton had heard of Wells's discovery; but eventually proper credit was given to Horace Wells.

"To the spirit of Horace Wells," concluded the speaker, "belongs the credit due for the greatest boon ever given to suffering humanity. Upon his memory remains no blot nor stain of selfishness. He only sought what he knew were the just emoluments of his calling, and being denied what he knew to be his just claims he ended his life in gloom."

Prof. James E. Garretson, Dean of the Philadelphia Dental College, was then introduced. His theme was: "The Benefits of Anæsthesia to Mankind." Before beginning he said he noticed the presence in the audience of Dr. G. Q. Colton, whose experiment fifty years ago gave birth in Wells's mind to the idea of anæsthesia, and who was present when he made his great discovery. He hoped Dr. Colton would come forward and have a seat upon the platform.

Drs. John S. Marshall, of Chicago, and Robert Huey, of Philadelphia, escorted Dr. Colton, amid uproarious applause, to a seat on the left of the President and the essayist.

Prof. Garretson then stated that to attempt to recount the many benefits that anæsthesia had been to mankind would require much more time than had been allowed him, that he was already on record, and would present to the committee his contribution in printed form for the memorial book if it was decided to issue one, and deposited on the desk a quantity of his writings on the subject. He then read a thirty-minute paper devoted for the most part to the repetition of the history of the discovery of Horace Wells. From the paper quoted before is clipped the following quotations:

On one occasion, now many years back, I was wandering through the lanes and alleys of Sleepy Hollow Cemetery, in the town of Concord, Mass. When being led up a hill I stepped over a now much-abused hedge of arbor vitæ, and discovered a plain low-set stone having upon its face a simple word.

At the foot of the hill I had found myself surrounded by what would not inaptly bear description as splendid mausoleums. Upon these marbles were deeply cut many names and the records of many virtues. Neither name nor virtues had, however, significance to me. No chord was struck, no response elicited. The word upon the low-set stone of the hilltop was "Hawthorne."

The ring of a bell is its metal. The name of a man is his work. Horace Wells! The name does not nor will not still. It rings and rings and rings, in distinctness, albeit accordant and discordant sounds are everywhere around it. Whether or not this man was a meditative philosopher to be found oftenest in haunts apart from men, or whether or not he was simply a vessel capable of holding, but never trying to fill itself, I am alike without knowledge as without desire to know. He was filled, however. The river of Lethe found in him a channel. Everywhere over the land flows the stream Nepenthe.

In continuation the speaker went into a philosophical dissertation upon the forms of objects, and then pictured the difference between surgery at present, and as it was seventy-five years ago.

Dr. L. D. Shepard, of Boston, introduced a resolution that had passed the Association some years ago, reaffirming the position then taken that Horace Wells did discover anæsthesia, and was the first to make known the results of his experiments. This resolution was adopted unanimously.

Dr. Robert Huey read a resolution authorizing a movement by a committee to be appointed by the President of the American Dental Association, to erect at Washington, D. C., by subscription from the dental profession, a monument to the memory of Horace Wells, as the discoverer of anæsthesia. This resolution was adopted amid applause, and Dr. Crawford afterwards appointed Dr. J. D. Thomas Chairman of a local committee of five, who are empowered to select one member from each State, the President of the State Association to constitute the General Committee.

Dr. J. D. Thomas was elected by the meeting Treasurer for the fund, and authorized to receive and receipt for contributions.

Loud calls for Dr. G. Q. Colton, of New York, brought him to his feet, and after the proper introduction by President Crawford he described his connection with the discovery of anæsthesia as follows:

On the 10th of December, 1844, I gave an exhibition of the amusing effects of nitrous oxide gas in the city of Hartford, Conn. After a brief lecture on the properties and effects of the gas, I invited a dozen or fifteen gentlemen who would like to inhale it to come upon the stage. Among those who came forward were Dr. Horace Wells and a gentleman by the name of Cooley. When under its influence, the latter began to dance and jump about. He ran against some wooden settees on the stage, and bruised his shins badly. After recovering from the effects of the gas, he went to his seat, next to Dr. Wells. Dr. Wells said to him: "You must have hurt yourself." "No," said Cooley, but at the same time he began to feel some pain in his leg. He was astonished to find his leg all bloody, but said that he felt no pain till the effects of the gas had passed off.

At the close of the exhibition, and while the audience was retiring, Dr. Wells came to me and said: "Why cannot a man have a tooth extracted when under the influence of the gas, and not feel it? I replied that I did not know, as the thought had never entered my head. Dr. Wells said he believed it could be done, and that if I would bring a bag of the gas to his office the next day, he would try it himself. The next day I took a bag of the gas to his office, and Dr. Wells called in Dr. Riggs, a neighboring dentist, to perform the operation. I administered the gas to Dr. Wells, and Dr. Riggs extracted a decayed molar tooth. On recovering and finding his tooth out Dr. Wells slapped his hand upon his knee, and exclaimed, very excitedly: "It is the greatest discovery ever made! I didn't feel so much as the prick of a pin." That was the first tooth ever drawn without pain, and was the birth of anæsthesia. This operation took place just fifty years ago to-day. This discovery of anæthesia, and its practical demonstration, belongs entirely to Dr. Wells.—*Philadelphia Press.*

When Dr. Colton took his seat, Mr. Charles Wells, a son of the discoverer, was called for, but beyond acknowledging the complipliment he made no remarks.

The banquet followed the afternoon meeting at night, at the Union League. One hundred and forty guests sat down, representing fourteen States in the Union. The *menu* was elaborate, and service excellent.

Dr. J. Y. Crawford, as President of the American Dental Association, presided, and Prof. E. T. Darby, of the University of Pennsylvania, acted as toastmaster.

Gen. Joseph R. Hawley, United States Senator from Connecticut, responded to the toast. "The Horace Wells Discovery—Its National Significance;" Prof. James Truman, to "Anæsthesia as a Dental Discovery;" Prof. J. William White, of Philadelphia, to "Anæsthesia as a Factor in the Evolution of Surgery;" Dr. Horatio C. Wood, Philadelphia, to "The Debt of Medicine to Anæsthesia;" Hon. A. K. McClure, of the *Philadelphia Times*, to "The Mastery of Pain from the Standpoint of a Layman;" Prof. Wilbur F. Litch, of Philadelphia, to "The Development of Our Knowledge of Anæsthesia;" District Attorney George S. Graham, of Philadelphia, to "The Medico-Legal Aspect of Anæsthesia;" Rev. S. D. McConnell, of Philadelphia, to "The Humanitarian Aspect of Anæsthesia;"

Dr. G. Q. Colton, of New York, to "An Historical Reminiscence;" Mr. Charles Wells, of Hartford, "A Personal Reminiscence."

Notes.

The State of Tennessee sent three representatives.

Georgia, Virginia, Kentucky, each had a single representative.

The banquet and speeches were a decided success, but here the "celebration" lost all its national character, and became a local affair.

The event should have aroused the attention of both the dental and medical world, and have been the occasion of a joint celebration not in a single city, but in all cities of any size. Then the newspaper notoriety given to Horace Wells would have spread his fame and have placed his name where it justly belongs.

The Philadelphians are a most hospitable people, and most elegant luncheons were spread for the visiting guests by "the Academy of Stomology," Dr. Louis Jack, the Faculty at the Philadelphia Dental College, and others.

BELLADONNA POISONING FROM WEARING POROUS PLASTERS.

The laity as well as the profession is well aware of the deadly character of belladonna and the necessary precautions with which it is to be administered, yet it is a very common custom to advise indiscriminately the use of belladonna porous plasters. Two cases have recently come to our knowledge, however, which will for a time at least put a check upon the practice in the city of Nashville.

Prof. Thomas L. Maddin, M.D., of the Medical Department of Vanderbilt University, has kindly furnished us with the following remarkable and interesting account of the first case.

Mrs. A, *æt.* 55, suffering with lumbago, and fearing that it might be some kidney trouble, after first having been rubbed over the lumbar region with a strong liniment and standing before a warm fire, concluded to apply belladonna plasters, one on either side of the spinal column in the region affected. This occurred at 7 P.M. At midnight she arose from bed and started across the room, whereupon she was seized with dimness of vision and vertigo, and being unable to walk steadily she became frightened and sat upon the floor. She soon became delirious and unconscious of her surroundings, and was conveyed to bed by her attendant. Medical aid was summoned, two physicians responding to the call. Upon careful examination, both concluded that she was suffering from the toxic effects of belladonna, but diligent inquiry failed to reveal that any such medicine had been given. Nothwithstanding this, the diagnosis of belladonna poisoning was clearly made out, as the dilation of the pupils and delirium could be explained in no other way. One-eighth grain of sulph. morphia was given hypodermically with temporary good effect. Later on apomorphia was administered hypodermically with very good effect as regards quieting patient for several hours. At the visit next morning the patient was still found with pupils greatly dilated, wildly delirious, and unconscious of her surroundings. Convinced that it was due to belladonna poisoning, the physicians persisted in further investigation. The domestic nurse finally admitted that the patient had applied two belladonna plasters as above stated; and that she, fearing that was too much, had removed one of them. The doctors hastily removed the other upon ascertaining the cause. In the meantime the patient's urine was always carefully examined and traces of albumen discovered present, but this quickly disappeared under the free use of diuretic waters. Fully six days elapsed before the pupils responded to light and full relief from the effects of the belladonna poison was obtained. After becoming conscious so as to answer questions intelligently, the patient described her sensations. She said her vision was obscured as though she were in the midst of a dense fog, but gradually the normal state of both vision and mental faculties were fully restored.

The second case reported was in the person of a Presbyterian minister residing in an adjoining town.

The plaster was applied for pains in the lumbar region about four o'clock in the morning. Pricking sensations were felt and spoken of at ten o'clock, or six hours after. Mr. P. came into Nashville on business, spent the day among his friends, and returned home, reaching his family about five o'clock, when he declared he could not recall what he had done while in the city. His manner and conversation were of such a character to alarm his wife and cause her to send for a physician. On an examination he declared that his patient was poisoned by belladonna, and notwithstanding the wife's protestations to the contrary, the usual remedies to counteract its influence were administered to the patient, and after an hour left him. Not satisfied, he made a visit to the druggist his patient usually patronized, and from him learned that

that morning a porous plaster had been purchased by the gentleman. A note to the wife to at once remove it if found was the means of soon discovering what occasioned the belladonna poisoning.

THE TENNESSEE DENTAL ASSOCIATION.

The next meeting of the State Association, which is to be held at Knoxville in July, will be the first ever held east of Chattanooga, and if it is to be the equal of past sessions the Executive Committee must go to work early and arouse an interest in its members.

Knoxville is a great commercial city, beautifully situated, surrounded by lofty mountains, having ample first-class hotel accommodations, and is inhabited by a cultivated, refined, and hospitable people. Aside from the usual advantages to be derived from such gatherings, this must prove one of great interest and social enjoyment.

The President, Dr. W. H. Richards, and Dr. B. D. Brabson, Chairman of the Executive Committee, both reside in Knoxville, and are determined to make the meeting a success and to see that all who attend shall meet a cordial welcome.

To our brethren in East Tennessee who are not members let us say that, though the Association has done without you many years, it has not been because you were not wanted or needed. Let every reputable dentist in this section feel that this is his State Association, and that he is responsible for its conduct and welfare and that it is his duty to be there.

We learn that our friend, Dr. George W. Rembert, late of Natchez, Miss., has removed to New Orleans, where he will in future practice his profession. We commend him to the citizens and profession of that city as a gentleman of sterling integrity, and a skillful dentist.

Do you ever write an article for a journal? No. Then why do you after glancing it over throw it aside with the remark: "There is nothing in it worth reading?" You think you are a great critic, don't you?

You are of the opinion that you could give the editor many pointers as to how to conduct successfully a dental journal. Yet when called upon to furnish a page of readable matter you can't do it to save your life.

Yet you owe it to yourself and the profession as much as the editor, to do your part, and to make contributions to the sum of human knowledge. Have you done so?

BOOK NOTICES.

Operative Technics. A Manual of Operative Technics. A Practical Treatise on the Elements of Operative Dentistry. By Thomas E. Weeks, D.D.S., Professor of Operative Dentistry and Dental Anatomy in the College of Dentistry, Department of Medicine, University of Minnesota. 1894. Chicago: H. D. Justi & Son. Price, cloth, $2.

It is a pleasure to review a work on this subject written entirely from a new standpoint, published in such a careful way, with good letterpress, and new illustrations.

The writer has presented a compact, systematic, and serviceable book, arranged especially for the convenience of the student, yet by no means open to the charge of superficiality.

The originally arranged and excellent blackboard diagrams, outlining the work to be covered in three years of college life, presented in a little more than one hundred pages, treat of almost every subject to be considered under "Operative Dentistry," and yet do not neglect the scientific side of this subject, or fail to give valuable practical hints and observations.

Speaking from the standpoint of a teacher, Dr. Weeks has presented a work which is eminently scientific, systematic, and helpful; a credit to the writer and of great practical value, in many respects the best work within the reach of the student and practitioner.

For the teacher of operative technics there is no work which can take its place.

The Anatomy and Pathology of the Teeth. Profusely illustrated. By C. F. W. Bödecker, D.D.S., M.D.S. Adopted by the National Association of Dental Faculties as a text-book for dental students. Published by the S. S. White Dental Manufacturing Company, Philadelphia, Pa.

This work was much needed by both practitioner and student, and comes very near filling all the requirements of the case. The illustrations from the master hand of Carl Heitzman are exquisite in detail and execution, but it is hardly fair, at least to the young student, to give him histological *drawings* showing all the principal features and minute points of the "reticulum theory," when at the present time we can so easily *photograph* anything we can see in the microscope. Taking into consideration the many other claims upon Dr. Bödecker's time, it seems almost wonderful that he was able to accomplish the enormous task which he has so creditably completed.

DENTAL ANATOMY. A Descriptive Anatomy of the Human Teeth, with Glossary. By G. B. Black, D.D.S., Sc.D. Third edition. Philadelphia: Wilmington Dental Manufacturing Company. 1894. Price, cloth, $2.50.

That three editions should be demanded in a little more than that number of years speaks in loudest praise of the excellence of this work. The first editions met with favor, and the third fully warrants the confidence the profession has placed in the author.

In the attempt to introduce a system of nomenclature adapted to operative dentistry, the work has succeeded most admirably, as is evidenced by the fact that it has been adopted by most of the leading dental colleges, thus giving substantial evidence of the appreciation of its merits by the teachers of this branch of the profession.

The glossary cannot fail to be of interest, giving a concise definition of the many terms used in describing the teeth, yet in a most comprehensive manner.

PEARSONS' APPOINTMENT BOOK FOR THE VEST POCKET FOR 1895. Published by R. I. Pearsons & Co., Kansas City.

The editor of the HEADLIGHT acknowledges receipt of this annual visitor. Just as convenient as ever. A gentle reminder of a genial, generous, good fellow. Thanks.

THE COLUMBIA PAD CALENDAR FOR 1895.

We are again indebted to the Pope Manufacturing Company, of Hartford, Conn., for this most attractive desk memoranda. This company is doing much to arouse earnest attention to the necessity of good country roads, besides tempting men and women to indulge in cycling, which is a most healthful exercise, stimulating body and mind—for which it should be heartily commended.

MARRIAGE NOTICES.

John L. Fox, D.D.S., a graduate of the Dental Department of Vanderbilt University, and "Founder's Medalist," was married to Miss Nellie G. Moore October 10, 1894. Both are of Mt. Clemons, Mich.

D. H. Bell, D.D.S., and Miss Mollie Rust were united in marriage October 21, 1894. Both are of Rayville, La.

Associations.

AMERICAN DENTAL ASSOCIATION.

J. Y. Crawford, Nashville, Tenn., President; S. C. G. Watkins, Mount Clair, N. J., First Vice President; Thomas Fillebrown, Boston, Mass., Second Vice President; George H. Cushing, Chicago, Ill., Recording Secretary; Emma Eames Chase, St. Louis, Mo., Corresponding Secretary; Henry W. Morgan, Nashville, Tenn., Treasurer. Executive Committee: H. A. Smith, Cincinnati, O.; C. N. Peirce, Philadelphia, Pa.; Louis Ottofy, Chicago, Ill. Next meeting to be held second Tuesday in August, 1895, at Asbury Park, N. J.

SOUTHERN DENTAL ASSOCIATION.

H. E. Beach, Clarksville, Tenn., President; John S. Thompson, Atlanta, Ga., First Vice President; Louis P. Dotterer, Charleston, S. C., Second Vice President; J. W. Seals, Stuttgart, Ark., Third Vice President; E. P. Beadles, Danville, Va., Corresponding Secretary; S. W. Foster, Decatur, Ala., Recording Secretary; H. A. Lawrence, Athens, Ga., Treasurer. The vacancies in the Executive Committee were filled by the election of S. B. Cook, Chattanooga, Tenn., and V. E. Turner, Raleigh, N. C. The next place of meeting is Atlanta, Ga., during the Cotton Exposition, 1895.

NATIONAL ASSOCIATION OF DENTAL FACULTIES.

Frank Abbott, New York, President; S. H. Guilford, Philadelphia, Vice President; Louis Ottofy, Chicago, Secretary; Henry W. Morgan, Nashville, Treasurer. Executive Committee: J. Taft, Cincinnati; Thomas Fillebrown, Boston; B. Holly Smith, Baltimore. Committee Ad Interim: James Truman, Philadelphia; F. Peabody, Louisville; Truman W. Brophy, Chicago.

NATIONAL SCHOOL OF DENTAL TECHNICS.

D. M. Cattell, Chicago, Ill., President; Thomas E. Weeks, Minneapolis, Minn., First Vice President; J. F. Stephan, Cleveland, O., Secretary-Treasurer. Executive Board: Thomas E. Weeks, Minneapolis, Minn.; George H. Wilson, Cleveland, O.; Henry W. Morgan, Nashville, Tenn.

ALABAMA DENTAL ASSOCIATION.

H. D. Boyd, Troy, President; O. C. Farish, Camden, First Vice President; H. B. Williamson, Evergreen, Second Vice President; S. W. Foster, Decatur, Secretary; G. W. Rouseau, Montgomery, Treasurer. R. B. Chapman, of Troy, was elected to the Board of Dental Examiners. Mobile is the place selected for the next meeting, second Tuesday in April, 1895.

ARKANSAS STATE DENTAL ASSOCIATION.

J. R. Southworth, Little Rock, President; J. S. Stillwell, Searcy, First Vice President; J. M. Powell, Prescott, Second Vice President; W. H. Buckley, Little Rock, Secretary and Treasurer. The Society will meet in Little Rock the third Tuesday in May, 1895.

GEORGIA STATE DENTAL SOCIETY.

W. W. Hill, Washington, President; H. S. Colding, Savannah, First Vice President; John S. Thompson, Atlanta, Second Vice President; H. A. Lowrance, Athens, Treasurer; O. H. McDonald, Griffin, Corresponding Secretary; S. H. McKee, Americus, Recording Secretary. Executive Committee: H. R. Jewett, Chairman; D. Hopps. J. C. Brewer, J. M. Mason, W. S. Simmons.

MISSISSIPPI STATE DENTAL ASSOCIATION.

W. E. Walker, Pass Christian, President; F. H. Smith, Water Valley, Vice President; J. C. West, Natchez, Secretary; C. C. Crowder, Kosciusko, Treasurer. The Association meets in Jackson on the Wednesday following the first Tuesday in April, 1895.

TENNESSEE STATE BOARD OF EXAMINERS.

F. A. Shotwell, Rogersville, President; J. L. Mewborn, Memphis, Secretary; W. H. P. Jones, Nashville; W. T. Arrington, Memphis; S. B. Cook, Chattanooga; H. E. Beach, Clarksville. Next meeting in July, 1895, Knoxville.

TENNESSEE STATE DENTAL ASSOCIATION.

Dr. W. H. Richards, Knoxville, President; Dr. W. P. Glenn, Humboldt, Vice President; W. P. Houston, Lawrenceburg, Recording Secretary; H. E. Beach, Clarksville, Treasurer; W. J. Morrison, Nashville, Corresponding Secretary. Executive Committee: Drs. B. D. Brabson, R. A. Melindy, Knoxville; G. R. Pearcy, Jackson. The next meeting will be held in Knoxville Tuesday following July 4, 1895.

T·H·E

DENTAL HEADLIGHT.

VOL. 16. NASHVILLE, TENN., APRIL, 1895. NO. 2.

Original Communications. . . . .

SOME THOUGHTS TOUCHING EXCESS OF MINERAL OR CALCAREOUS MATTER IN THE SYSTEM.*

BY JOHN C. STOREY, M.D., DD.S., DALLAS, TEX.

As our remarks in this paper deal almost entirely with the results of excessive deposits of mineral or calcareous matter in the system after the bony framework is complete (the most of which enter into the formation of bone), it will be well in the outset to consider for a brief space whence come these deposits, and then the results. Now, in all limestone regions (and here we find the conditions of which we are about to speak more prevalent than elsewhere); and more especially here in Texas, as this has been the field of our most extended observation, we find lime pervading every source of food supply, even the very air we breath, and especially the water we drink. Add to this soda in some of its forms, which enters so largely into our various food preparations, with magnesia so often found in our drinking water, and then again add the not only useless, but harmful, salts of aluminum frequently found in our bread, and we have sufficient source for any amount of these deposits. These mineral substances, taken into the system in excess of the demand (even granting that they are ever demanded in that form) after the system or body is mature, constitute the tartar which we find deposited about the necks of the teeth, besides other stony formations to be noted farther on.

Every observer is aware of the distinctive influence of these deposits around the teeth, to the teeth themselves, causing more loss of these organs than all other sources combined, besides aiding and abetting other diseases with the vast amount of blood poisoning by reason of the pus generated about the necks of the teeth, from this irritant, and carried into the system through the digestive apparatus and by direct absorption.

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* Read before the Section on Oral and Dental Surgery, Nashville Academy of Medicine.

But may we not also find in this excessive supply of earthy or mineral substances in the system the prime, yet hitherto occult, cause of some of our most fatal maladies? May we not here have the true cause attending fatal albuminuria or so-called Bright's disease? It must be admitted that every case of albuminuria is not Bright's disease, though every case of Bright's disease is albuminuria. Were it otherwise, few mothers would live to see their second baby. Happily, then, this is not the case. Albuminuria may be said to be a disease of nutrition (if disease at all), either excessive or perverted—in the pregnant woman evidently excessive, since the ruddy cheek, the increase of adipose tissue as shown in the rotundity of form, indicate the most perfect and robust health. An examination of the urine, however, at this time, will almost invariably indicate the presence of albumin. Then if albumin in the pregnant woman comes from too much nutrition, may it not be the same in every other case? Now this albumin, being in excess, and not needed for use in building up the tissues, is instead taken by the various emunctories of the body and cast out with the refuse. Now may not this albumin in a system too well supplied with mineral salts, in its passage through the kidneys, the natural emunctory of the body for the mineral substances as the liver is for the vegetable, be there coagulated in the tubules, and form the little casts as we see them under the microscope, and all the pathognomonic signs of Bright's disease? And these coagula in turn furnish a nucleus for the deposit of the various earthy matters, forming little rough stones, it may be ever so minute, which by their presence set up ulcerative inflammation and develop true Bright's disease, destroying the structure of the kidney, and ultimately the life of the patient. It may be also that such a condition at the same time prevails in the great laboratory of the system, wherein are manufactured the red blood corpuscles, since their constant diminution in the circulation is manifest from the increasing pallor or leaden hue as the disease progresses; and the almost uniformly sudden death of the patient, for, notwithstanding death is the inevitable result, it comes on almost always sooner than expected. The system having consumed the entire red blood supply, life goes out as does a lamp when the wick is exhausted. A reasonable foundation for these views is found in the fact that we have seen no case of Bright's disease in which there was not a large deposit of tartar about the teeth; and whoever saw a case in an individual brought up in the piny woods, and who had been raised on pure freestone water and a plain frugal diet? In further confirmation we note the rarity of this disease among children, and only in those of precocious development, and where the supply of calareous matter had been largely in excess of the demand.

That we are led further to these conclusions comes from the fact that the remedies usually most efficacious in this fearfully fatal malady are found to be water absolutely pure or in which there is an excess of some acid, with an entire absence of the salts of lime, soda, etc., with a diet also free from these salts.

It might be given as a reason why the pregnant woman enjoys perfect immunity from this disease, notwithstanding her system is surcharged with albumin at this time, is the urgent demand for bone-making material for the upbuilding of the factors which she is growing in utero. And is it not a fact that calcareous deposits about the teeth are much lessened, if not entirely suspended, during this period.

The one great difficulty in the way of successful treatment of this disease lies in its insidiousness. Having its origin in too much health, it steals on the patient so gradually that he is often beyond the reach of hope or remedy before he becomes fully aware of his condition.

We wish to add, further, that these ideas, hypothetical as they are, have neither been bought, borrowed, nor stolen, since we have read nothing concerning this disease in thirty years, save, perhaps, the statements of the wonderful cures wrought by the various mineral waters in the advertisements of the wells and springs which produce them. But they are the results growing out of a study of the effects of these calcareous deposits in the diseases brought under our immediate observation by reason of the specialty of dentistry to which we have directed our attention for many years. Following the line of thought indicated by the known diseases produced by this evident surplus of calcareous matter, we have gone beyond the limit of our specialty and entered the field of general pathology with our speculations and arrived at the conclusions touching Bright's disease as given above. Going on then to amplify a little, if these conclusions are correct in regard to the etiology of this disease, have we not a key that will entirely shut the door to its ingress and, with many others, blot its name from the lists of incurables in our nosology?

To do this we have a task before us; but as physicians, philanthropists, and true scientists, it is our duty to meet the condition with convincing arguments; arguments that will change entirely our dietetic system to the extent that calcareous matter in dangerous quantity will not be permitted to enter the system after the body is mature.

It is a well-ascertained fact that all the mineral salts necessary to maintain in harmony the process of digestion and the various physiological functions of the human organism are to be found in the vital foods and in the proper form to be appropriated in the process of nutrition. In other words, live on a more purely fruit and vegetable diet, eschew salt meats, soda biscuit, alum-made baker's bread, and especially lime water, or such as is found in the wells and springs contiguous to this city, and we might add all limestone regions, which often contain, in addition to lime, more or less magnesia.

We are well aware that this will antagonize existing customs, run counter to old established habits and prejudices, and meet with opposition from tradesmen and manufacturers; but if from observation and long experience we are satisfied of the danger to health and life that lurks in our present manner of living, and that immunity from pain, suffering, and disease, with an existence made enjoyable, and life prolonged far beyond the usual time, and coming to an end as quietly and peacefully as a babe to its slumbers, will be brought about by this change, then it surely is our duty, and the demand is upon us to make the effort. Standing as we do in the great light which modern science has thrown on the causes of disease to the extent of completely revolutionizing our treatment, and lifting medicine from empiricism to the dignity of a true science, may we not as scientists continue our research till we are enabled to entirely prevent many of the incurables which now confront us? It is still a sad commentary on scientific medicine to acknowledge any disease as incurable, or without the pale of prevention. We acknowledge our skepticism regarding hereditary transmission of disease, believe in contagion as the more universal method of communication, and also that all diseases may be either cured or prevented.

Then, to repeat to some extent, besides Bright's disease, whose cause and fatality we believe may be found in calcareous deposits, we do know that we find these in the bladder as stone, and there are few physicians long in the practice but have witnessed the excruciating pain in the passage of a gallstone, or renal calculus. A specimen of gallstone was presented to me a few years since taken from a gall bladder which was full to complete impaction, and its size larger than a goose egg. A physician informed me not long since that he counted more than three hundred of these stones in one evacuation from the bowels, and these he was told had been passing in like numbers in each evacuation for a week or more. Again, we see the arteries filling up with these deposits till they become rigid, brittle tubes. All these go to make up a list of dangerous and usually incurable diseases.

That this baneful influence may extend beyond the bounds of our present observation is within the limit of probability, but to what extent may never be demonstrated.

Now, if we are in fact just what we eat and drink, and we cannot be anything else, and many of our most serious maladies are the results of improper diet, can we not so regulate our food supply that each organ and system of organs will be supplied with nutrition just sufficient for the repair without any excess, and thus the functional harmony of each be maintained and carried on without trenching on the prerogative of another, and the whole of man's life, unmarred by pain or ache, be one of continued enjoyment till the measure of his days is full when he passes into the realms of the great beyond, where disease has ever been a stranger, and where pleasures flow continued as an everlasting river.

TREATMENT OF DECAY OF DECIDUOUS TEETH.[*]

BY L. G. NOEL, M.D., D.S., NASHVILLE, TENN.

I WISH briefly to put before you a modification of the present practice in the treatment of the decay of the deciduous teeth, which I believe to be new; so new indeed that I have not myself had an opportunity to test its value; yet only an idea in my mind. It will take time to test it. I would suggest the free separation of these temporary molars as soon as it becomes evident that they are decayed, with knife-shaped corundum disks, making a decided V-shaped opening that cannot possibly fully close. Where the sixth year molars are in place and there is decay on the distal surfaces of the second deciduous molar, I should use safe-sided files of the ancient style, and carefully avoid cutting the enamel upon the permanent teeth. After making free separations I should treat freely with silver nitrate, and instruct the patient to return for additional treatments until a thorough blackening and ebonation of the dentine was obtained. Where the decay is extensive, nearly reaching the pulp and so deep that the file or disk fails to entirely remove the decay, I propose the scraping away with spoon-shaped excavators of the softest portions, after having first thoroughly blackened and sterilized the cavity with the silver nitrate and giving time for structural changes to take place underneath, repeating the cauterization until a smooth, hard, though possibly somewhat concaved, surface is obtained. I would also propose the thorough cauterization of all grinding surface cavities before fillings are inserted into deciduous teeth. The application of the above ideas to the treatment of other cavities I leave for you to think about, believing it worthy of your consideration.

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[*] Read before the Dental Section, Nashville Academy of Medicine.

MESSAGE OF PRESIDENT W. H. RICHARDS, OF THE STATE ASSOCIATION.

To the Dental Profession of the State.

It is customary for the President of the society to comply with the By-laws by delivering an address on the opening of the meeting, setting forth his views as to the needs of the profession. A brief discussion follows, occupying the minds receiving it long enough to be passed by mutual consent where it will never be thought of again.

The above custom should be abolished or simply confined to remarks of welcome, and stating to those assembled the mode of procedure as decided upon for the meetings to ensue.

I take the privilege now of delivering to you a message in accordance with my views, some months previous to our meeting, setting forth what I consider will bring about a much-needed reform by turning the attention of the members of the society, as well as others now indifferent, to subjects on which they should think, that they may not come to the meeting unprepared to enter into the proceedings intelligently and give ideas in return for those received.

I hope to have from each reputable dentist in the State, whether a member of the society or not, an expression concerning this new movement, which must depend for its success upon active coöperation. In a subsequent paper I will set forth what seems to be the desire of the majority as to what we shall do—both as to length of meeting, kinds of papers to be read (no papers read in the daytime), number and kinds of clinics, and if possible, by whom. No stone will be unturned toward making this a success unless it be the *one* at *your door.*

Our meeting of the State Dental Society convenes here in Knoxville July 1, 1895. How best to interest each member and make it a credit to all who participate can be done, in my judgment, in one way only—viz., to make each member of the Association a committee of one to perfect arrangements and bring to a complete finish. Having received your appointment, with this communication I wish to call your attention to a few suggestions which you can enlarge upon and help focalize at the meeting.

This is the Centennial year of our State; a befitting time to gather together our forces and throw off the moss which is fast closing in upon everything that clings too close for life to old modes. New resolutions, new ideas, new ways of applying old principles to new conditions, thus bringing about reaction and new life. The growing disposition to stay away from dental meetings may be charged to the fact that the dentist can stay at home and secure through his journal the whole theoretical proceeding for a year's subscription.

In addition to the above, first-class clinical demonstrations have been left entirely in the hands of the regular and postgraduate schools. The attraction for the busy practitioner has thus been removed from societies. At dental meetings nowadays you have to drive the busy practitioner from a clinic, ordinarily well conducted, to hear papers read and discussed. If clinics are properly performed by skillful manipulators, under conditions necessary to success, there would be no lack for attendance on them.

We need a change. How shall we bring it about. Every man who has been in practice from five to twenty years needs a postgraduate course. Very few are able to take the time or send the necessary fifty dollars for the same, yet you will admit that many things have crept into you through the journals which you would rather have seen than read about.

As a committee of one are you ready and willing to help with your influence, personal exertion, and presence to conduct a State postgraduate school for as many days as seem proper to hold such a meeting, using the daytime for clinical work and the night for papers? Are you now ready to sit down and write me what you would prefer to see done in the way of operations, or on what subject you would like to hear a paper? Have you a new appliance that you will demonstrate at this meeting? Do you know of a brother who is not a member of the State Society that you would like to have join us? Is there any one out of the State you would like to have share the course you have helped to make a success? If so, write him. Can you contribute anything of an historical character that would fill a niche in the proceedings? We need a brief history of the two dental societies, likewise of our schools, all of which will come in to help make the volume, at the close of the Centennial Dental Meeting of our State, of great interest.

The man who sits quietly at home, and leaves all these matters for somebody to attend to, must soon find himself without a living business. Let us pull together from this on. Much good has been done by legislation, but more can be if you will lend a hand.

Knoxville, Tenn.

*ADDRESS OF PROF. J. P. GRAY, M.D., D.D., DENTAL DEPARTMENT, UNIVERSITY OF TENNESSEE.**

Gentlemen of the Graduating Class: In these days of railways, telegraphs, and newspapers; of multiplied interests, social, commercial, and scientific; and of innumerable assemblies, councils, and conventions; no event rises above the commonplace to the general public or produces more than a spasmodic sensation among the masses. The world looks on unmoved at the passing show, and bestows but little thought upon the trend of its movement. Yet the occasion of this gathering of teachers, pupils, and friends of a dental college is not without a certain degree of novelty, and is not devoid of significance.

Schools of literature, law, theology, and medicine, and their annual commencements, are time-honored institutions. It was left to the present century to inaugurate a systematic study of dentistry, to separate it from the mass of medical learning, to elevate it into the domain of a special science, and to round it into form. Already the humble beginning is forgotten, dental colleges take rank with the schools, and the profession which they open invites to a lucrative and honorable calling the brightest talent of our country.

Modern research discloses some indications that dentistry may have been pursued with considerable skill by specialists in ancient times; but, if so, it shared the fate of other arts and sciences that were lost beneath the ruins of time; and for ages the knowledge concerning it was limited to the application of simple remedies to assuage pain and to the rude extraction of teeth by indifferent appliances in more indifferent hands. Indeed, the village barber was as much of an adept at "pulling a molar" as the village doctor, and divided the business in that line with the latter functionary. How much of philosophy, of cheerfulness, of health and beauty was lost! and how much of bitterness, spleen, sickness, and ugliness was saved to the world through ignorance of the undeveloped science, we can only surmise.

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*Delivered at the Vendome Theater Thursday, March 21, 1895.

To-day the multiplied methods of relieving human suffering and of ministering to health, symmetry, and beauty demand the highest ingenuity and the most earnest thought of those who venture upon the pursuit of dentistry.

Medicine may well have surrendered this domain, for it is beyond the ability of the general practitioner to compass, and the surgeon may with great propriety leave it to be cultivated by the specialist. It is only in this way that the greatest progress can be made. It was because dentistry was of sufficient importance that it has been elevated to a distinct rank and holds a conspicuous position among the various branches of medical science. Nevertheless, it should be borne in mind that dentistry is closely allied to medicine, and he who would know all about the former must needs know a vast deal about the latter.

Medicine is the main stream; dentistry, one of the most important tributaries. Specialization is the watchword of the hour. The most striking evidence of social and intellectual advancement is the division and subdivision of labor. The mission of the dentist, the oculist, and the aurist is a noble one, and a more than sufficient excuse for his existence. As mankind gets farther away from the old endless round of toil, and the flower of life blooms more perfect, who shall say on that to-morrow that there is not an honorable place for the *masseur*, the manicure, the teacher of physical culture? With the rapid increase of the Trilby mania, the occupation of the chiropodist must soon be dignified as a profession.

It was the wonderful development of mental science that created the demand for dental schools, and the standard of these schools that have risen to supply that demand must inevitably fix the *status* of the profession. It is the brief but remarkable history of dentistry that lends novelty and significance to this occasion. This is the seventeenth annual commencement of a college, with special facilities, special courses of study, and special instructors, devoted to the preparation of young men for the dental profession. To-night a graduating class received diplomas and will return to their homes with positions of honor and dignity assured them in a profession that is in its infancy as compared with that of medicine, from which it sprang.

We cannot but reflect upon that long period of time when dentistry was practically unknown and medicine languished in an atmosphere of ignorance and superstition. We are inclined to feel a kind of pity for those ancient scientific dabblers who knew nothing about crowns and bridge work, antitoxine and appendicitis. They were studious enough, but failed to pursue the right method. Their curious learning was built upon false theories. They thought in closets rather than in laboratories. To them the earth was flat and stationary, the firmament a crystalline sphere, and the stars the source of good or evil fortune. The influence of great names fettered thought and orthodoxy shackled freedom. There were brave spirits that caught glimmerings of truth and fought against established ignorance and intrenched superstition. The work of Hippocrates was epochal in the history of medicine, for he first applied the correct method of observation and experiment. Six hundred years later, Galen stands as another landmark defining the boundaries of medical science. The alchemist, feared and hated, toiling to wrest from nature her secrets, aided no little in the advancement of true science. Albertus and Paracelsus have a place in the history of the long struggle against error and prejudice. Not until Bacon gave to the world the fruit of his marvelous genius did mankind realize that observation, experiment, and instruction is the correct method of arriving at truth, and receive that impulse toward exact and useful knowledge whose stimulating force but increases with the passing years. We feel that we are greater than our sires; and indeed we are. We are, however, only the sum of all that has been. We are mighty, because we stand upon the shoulders of mighty generations of the past. But for the courage, the patience, the ambition, and the toil of our predecessors, we should still have jugglers searching for the toothache worm, be bled on the slightest provocation, and be dosed in tiger's blood and powdered reptiles.

The harvest seems to be all the richer because the field of science lay fallow for so many centuries. In the light of present achievement, past ages stand featureless in the gloom of a long night. The tree of knowledge is the tree of life. Forcing its way through an unyielding soil, it has spread out its kindly branches, whose leaves are for the healing of the nations. A thousand buds are swelling to the blossom, the fruitage whereof no man has dreamed. Along no line of inquiry has the eager scientist reached a wall of limitation. The field broadens as he advances.

All experience is an arch wherethrough
Gleams that untraveled world whose
Margin fades forever and forever as we move.

The problems that on yesterday seemed difficult are to-day as simple as axioms. There is an ever increasing facility for research and experiment and discovery. What we see to-day is only an earnest of what shall be to-morrow.

It makes me mad to see what men shall do,
And I in my grave—
This world's no blot for us nor blank—
It means intensely and means good.

This fruitful activity, this era of marvelous achievement, is not confined to the domain of science. The spirit of iconoclasm pervades every department of human effort and reaches all human conditions and institutions. False theories are ruthlessly overturned, worn-out doctrines are discarded, and ancient wrongs are assaulted in their strongholds. Human life is of more worth and dignity than at any time in the history of the world. Social and economic questions are being discussed from standpoints that command a view of the new and complex conditions under which we live. There is earnest and thoughtful effort toward minimizing the inequalities of life, promoting its happiness, and bettering the condition of the race.

What is a man's excuse for being? What is the measure of his duty as a citizen and a member of society? What does he give to the world in exchange for what he receives? Is he a parasite, or does he bear a share of the burden? Does he make right use of wealth and opportunity, or does he sin against his fellow-man? These are some of the questions that are asked and that must be answered consistently with the demands of justice and humanity.

The thirst for knowledge, the hunger for truth, the love for justice, the desire for a larger and fuller happiness—these and a thousand other forces are the silent agencies whereby God is bringing civilization to its perfect flower and fashioning man anew in the image and after the likeness of his Creator. On that golden to-morrow, the "new man," freed from his prejudices, and the "new woman," emancipated from her follies, shall walk hand in hand, reconciled in the sunlight of his blessing.

Gentlemen graduates of the Dental Department of the University of Tennessee, I have called your attention briefly and in general terms to the restless activity which is at present manifest in the scientific world. I have done so for the very purpose that you should be impressed, at this critical point in your career, with the fact that important and rapid changes are taking place in every direction of scientific pursuit. With this great fact before you, you can readily conceive what a revolution must be wrought in our present ideas on all subjects. Not medicine or dentistry simply, but the whole range of science, will he affected with an incalculable reflex influence upon human life and society. Demonstrated facts, the fraction of truth already known, will remain unchanged; but it is beyond the power of imagination to picture the discoveries of hidden facts, the future interpretation and explanation of nature's laws whose force is now but blindly felt. The development in dentistry is only one of the many advances in science. There will be branches in dentistry just as the latter is now a branch of medicine. You must bear in mind the necessity of renewed exertions in your work. It may be yours to build upon true foundations already laid or to show the falsity of methods now accepted as correct; but, at any rate, it is your duty to keep pace with the most active.

Young gentlemen, you have reached that point in your professional career when you must be responsible for your own thoughts and actions; you can no longer rely upon ours. Do not wait for the approbation of others; it will come with your own welldoing, even though it should be too late for you to derive any benefit therefrom.

Love your profession for its own sake; the affection will be returned a hundredfold. You expect to live by it, and you will live by it if you pursue it in the proper spirit of love and devotion. The larger the investment of good and noble impulses in the work that lies before you, the richer will be the returns in everything that goes to make life better and happier. On the contrary, the more ignoble the purpose with which you enter upon your calling, the less will be its rewards, with the grave danger of coming face to face with failure at the end. Looked upon in no other light, it is a duty you owe the profession whence you derive profit and position, to so act as to reflect honor upon it. You have no right to act otherwise; certainly when you appreciate the fact that your *Alma Mater* has placed in your hands to-night a trust so sacred that you ought to guard it with your whole soul.

I charge you, therefore, to go forth inspired with a high resolve to work with all the strength with which you are endowed, and gain from each struggle an added power of conquest. Go out upon your several ways nerved with the lofty purpose of accomplishing good and leaving the world better for your having lived.

Love, like a stream, flows down and on. A mother stands upon the threshold of the old home and watches the triumphant course of her son with a yearning tenderness, a grateful joy, that the son can never know. Your *Alma Mater* will ever look upon you with loving regard, and asks that in your onward career you sometimes look back to her with an affectionate remembrance.

Young gentlemen, in the name of the Faculty, I bid you, one and all, Godspeed.

Selections. . . . .

MODERATION IN PRACTICE AND IN STATEMENT.*

BY SAFFORD G. PERRY, D.D.S., NEW YORK CITY.

At the last meeting of this society Dr. Jarvie made some very timely remarks on the subject of moderation in practice and moderation in statement of professional experience and opinion.

The lateness of the hour prevented me from expressing approval of his opinions and of adding some thoughts of my own on the same general subject.

Taking his happy expression "moderation" as a text, I would like now, in a rambling sort of way, to express some thoughts which I trust will not be considered too self-assertive, but rather as suggestive to those who care for the real advancement of our calling in all that makes it worthy to be considered a relatively exact and therefore scientific profession.

In the beginning, however, I will say something on the subject of accuracy of observation and expression, and later something on the subject of moderation in practice.

If I commence with a plea for higher scientific attainments, I shall only be following in the footsteps of many who have talked and written on the subject of dental education and of the means for the elevation of our profession; and I shall expect you to be weary at the outset, for have we not all grown tired of the subject in all its different bearings? and are we not all longing for some new statement of the old story, if we must have any statement of it at all?

If the truth were told, I think we are all unconsciously waiting for some new and more practical way of helping our profession to a higher place; and I venture to suggest that, instead of talking so much about dental education, and the training of the young, it would not be out of place if we, who are older, should inspect a little more carefully our own careless methods, and should endeavor to correct and perfect them, so that if we are looked to as examples by the young we may show that, in a new profession in which there must of necessity be much self-education, we have done something, at least, to encourage the scientific spirit, and in doing that have done the most we can do in our several ways for a profession with which we are so closely linked that we must rise or fall with it, as the case may be.

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* Read at a meeting of the New York Odontological Society November 20, 1894.

We are weary to the last point of endurance of being told that we are a very scientific body of men, and that our profession is a very exact one. We are tired of being told this, because deep down in our inner consciousness we know that it is not true.

In the strict sense of the term we are not very exact in our practice, and we are not very exact in the tabulation and report of our experience.

The best proof of this is shown by the fact that in our discussions a statement made that a certain line of practice is the best known is often met at once by another statement that the opposite is true.

As both cannot be true, the natural conclusion is that the real truth is somewhere between the two extremes, but we cannot tell just where, and in trying to adjust the sliding scale we finally comprehend the fact that we are not dealing with the exact truth itself at all, but with individual opinions of it, even our own opinion. Of course there are certain fundamental facts on which our practice rests. For instance, we know the certain action of a few drugs, but we use many more, the ultimate action of which we know very little.

We know that under certain conditions certain filling materials, properly used, have the power to arrest decay of the teeth, but we also know that the same materials, improperly used, or under certain other unfavorable conditions, do not save the teeth for any length of time.

It will be seen, then, that our practice cannot be strictly scientific; but it will be successful in proportion as we apply to it such scientific rules as we are able to master. If we are close observers, and have handcraft, we may become good practitioners. If we are careless in the observation of facts and hasty in our application of them, we are sure to become uneven and untrustworthy in our practice, even though we may have skillful fingers. In other words, our personality determines largely the character of our practice.

This is all elementary, and need not be stated, but for the fact that I want to emphasize the importance of what the astronomers call the "personal equation," and to show how largely we are influenced by it in the formation of our opinions, even without suspecting it ourselves.

If, in a science so exact as astronomy, allowance is always made for the personal equation, how much more must it be allowed for in a science so inexact as dentistry is and must always be!

So exact is astronomy that a slight personal aberration in observing and reporting the stars is quickly detected; but in dentistry, which is so inexact, the wildest personal aberrations sometimes go unnoticed and unrebuked.

To eliminate as far as possible the personal equation is a requirement of the first importance, if we are to lead the scientific life. Confucius insisted upon the acquirement of exact knowledge. He likened imperfect knowledge to a chair with four legs, one of which was broken. "You sit unevenly," he stated, "on such a chair."

Science is concerned with facts, not fancies, and he who can discover the facts and not be influenced by the fancies is the man whose influence will be felt most in the department of science in which he works.

The application of this general proposition to our own profession brings me to the point of repeating that, instead of harping forever about dental education and the elevation of the profession, it seems to me that it would be more becoming and more effective if, after becoming certain of our facts, we adopt the cold, careful, accurate language of science in describing them. Our literature would then not be so full of wild statements of opinions hysterically expressed. Exaggeration of statement is a common fault among men and women as we meet them in the world.

Our whole educational system is such, covering, as it does, so vast a range that we are unconsciously careless in our thinking, and naturally we become inaccurate in our habit of statement.

This may be overlooked in the affairs of the world; in fact, there, if people are too accurate, they become a sort of terror, and are called too prim and too precise.

But in the scientific world looseness of thinking and speaking is not permitted, and yet, in our profession it is common because we have not yet thrown off our early habits, and have not yet adopted the accuracy expected of those who lead the scientific life.

The scientific man must also be on his guard against a certain kind of imagination inherent in us all, and which is peculiar to childhood, and not easily outgrown. It is well illustrated by the story of the fisherman, who said the fish he saw swimming toward his hook was a foot long; while pulling him out he thought he must be two feet long, and when he got home and told about it he declared he was three feet long. His unprejudiced friends measured the monster, and found him not six inches long. Elated by his day's sport and the champagne of the woods and fields, the fisherman doubtless believed in a misty sort of way that he told the truth. Men use some new form of gold or amalgam, or gutta-percha or cement, and, charmed by the novelty, they believe and affirm that it is a fish three feet long. And some have the exuberant and hopeful temperament that leads them to think it is a whale! After a time it shrinks in their estimation, and they throw it back and wait for another bite. The same exaggeration is shown when a runaway horse dashes down the street, and six of the ten spectators say that the carriage wheels came within two inches of the lamp post. Careful measurement of the track made by the wheels would probably show that it did not come within two feet of ruin and destruction.

Some men assert and believe that they never have trouble with dead teeth. If their memories could be jogged and the truth known, it is not unlikely that they have come near having dead patients. In the same way they assert that in a case of periosteal disturbance they control the inflammation by the use of so and so, which acts upon the circulation in such and such a manner. Aside from the distraction of the nerve-currents caused by the use of counterirritants, what effect could they produce upon the "bugs" swarming around the end of the root of the sore tooth by any remedies applied to the gums? The Irishman said he could doctor himself, for he put some stuff on his boil and in a week or so it got well.

Words are the tools of the mind. A man with a well-equipped mind is like a carpenter with a good set of tools, which he takes with him, and with which he can work at any time and in any place. If he is a poet, and is being consumed by some internal canker, his words will be a reflex of his inward pain, and the artist's brush, when he paints, will make a streak of lurid red. If he is a philosopher, or thinks he is, his words will be ponderous and elephantine and soporific, even to the point of producing a condition, to use his own phrase, of *innocuous desuetude*, and his Latin terms will be bigger and longer than the things he describes, and his listeners will gape with wonder or fatigue, as the case may be. If he is a crank, he will be like a hand organ which, when wound up, always plays the same tune. But if he has the scientific training and spirit, his words will be few, but to the point. He will say exactly what he means and mean exactly what he says.

My allusion to the carpenter doubtless made you think of the term as applied to the botch dentist. I think it can equally well be applied to some men who are extremely skillful. Their fingers are so nimble, their touch so accurate, and their tools so good that they are forever carpentering away at the teeth, showing what can be done and how well they can do it. They seek unusual operations, and perform them with a great blowing of trumpets and beating of drums. They exaggerate the importance of their handicraft, and confine themselves within such a narrow range that they lose the larger, wider view, and fail to comprehend the significance of proper dental care, considered in its best and widest sense.

For the tooth carpenter I would substitute the dental "nurse." You smile at this, as it may suggest to you a society of old grannies, with clumsy hands and feeble brains, but I intend no joke. It is a term I have never seen nor heard, but to my mind it expresses an idea that probably will not be appreciated except by those who have had long experience, and have stood by and seen the teeth erupt and develop, and seen them decay and loosen, and have come to know that in the human mouth natural laws that cannot be set aside are at work, and that about all that can be done after all is to nurse and help and conserve.

I recently picked out from the gum a loose molar top-heavy, with a three-hour gold filling that had been put in only three or four years ago, in a beautiful manner by an "operator." An oxyphosphate filling matched to the color of the tooth, and put in in ten minutes and renewed three times at the most, with five minutes for each renewal, and a trifling cost for the whole, would have given as good results, so far as usefulness was concerned, and a better result in appearance. A dental "nurse," with a level head, would have recognized the condition of the mouth, and would have known at once that the tooth could not be retained but a few years at the most, and would have acted accordingly. There can be no argument made against the nimble fingers that can produce perfect work in all places when perfect work is really required. There are some teeth so hard to save that human fingers were never yet equal to the task, and so valuable that time and money should and would not be considered for a moment, if they could be saved. Then the cap and gown of the "nurse," with all the gentleness and good nature that goes with them, must be put aside and the armor of the "operator" put on with all the firmness that must ever accompany it.

In addition to rather careless habits of statement, and of not very level-headed practice, there exists in our profession a certain kind of inattention on the part of many of our good men, and also with some other equally good men there exists an unconscious intolerance of all ideas and modes of practice that are not in accordance with those they have adopted. This inattention is so widespread that any one who ventures to express an opinion, or to describe a certain line of practice, must do so at the risk of being misunderstood, even though he may use the most exact words in our language. I have experienced this myself many times, but never more markedly than after the publication last winter of a paper on the care of young teeth, for which I advocated the plastics, *under certain conditions*, and received the credit, in some quarters, of believing in them not only for all young teeth, but for all teeth. I have since looked that paper over, and I have failed to see how I could have stated any more clearly my faith in gold for teeth of good quality, under favorable conditions, even in young teeth. The intolerance of which I speak is a trait of our common humanity, and comes down to us through many generations. It has been shown most, perhaps, in the religious world; but it exists in our profession, as it does in all professions, and it will continue to do so far beyond our time. One who does not use the plastics will continue to be impatient with one who does, and one who never uses amalgam will pity or abuse the one who has the courage to admit that he sometimes depends upon it. And so on through the whole list. It requires courage to face the danger of being misunderstood, and it needs patience to bear the scorn of intolerance; but believing in plastics under certain conditions, and publicly advocating them, requires more courage still, for it puts a weapon into the hands of those who hate you or those who are jealous of you. But the man who has convictions and lives up to them must expect to "get it in the neck" anyhow. It is worth something, however, to be free, and I honor the man who can use plastics in places where he thinks they are called for, without thought of the effect on his reputation. Dr. Jarvie's phrase "moderation" exactly expresses the need in the dental profession to-day. Facts, carefully observed and clearly and tersely stated, have great value to earnest seekers after truth in a field where there must always exist to some extent conjecture and uncertainty.

Opinions of those who have had long experience also have great value, but a man's opinions must not be confounded with his facts. The facts he reports speak for themselves, and are of value as they are clear and plain and the reverse, as they become vague and shadowy. But the value of his opinions will depend upon the combinations of mental faculties that make up what we call a level head. If his opinions are to have value, he must show that he sees things as they are, and not as they seem to be, and he must have the power of justly estimating the importance of his facts, and of putting them all in proper relation to each other. In other words, he must have "horse sense," which, is after all, only a high order of common sense. If he has the true scientific spirit, he will be sincere; and being sincere, he will be poised and serene. He will become so absorbed with his facts that he will forget himself. His personality will be blotted out, and that which persists will be his array of facts. They can never be destroyed; if they can be, they are not facts! Without suspecting it, he will become unselfish. We are generally expected to explore the religious world for examples of unselfishness, but I doubt if we ever yet saw a more perfect example of an unselfish man than one who is a true follower of science in the fullest meaning of that term. He can have no mental struggles, for wherever science leads he must follow. As he pushes his way into the unknown, acquiring a knowledge of new facts, and discarding his errors, his life becomes a constant going back upon himself; but he has no regrets, for a single new truth outweighs all his old errors. If this new truth proves a delusion, it will be equally willingly given up. If he can give to the world a new fact and get the credit for it, he is happy. If he does not get credit for it, he is still happy, because the world has got the fact! If you say this is ideal, the reply is that a man who is full of the love of science is full of the love of truth, and the man who is full of the love of truth has a religion that embodies the most perfect ideal. If he is a dentist and invents some new device, or discovers some way by which his patients and his fellow-practitioners can be benefited, he is happy whether he gets the credit for it or not. If he puts in a fine filling, he can be content if it is never seen and admired. If the patient dies, his first thoughts will not be: "Another show filling gone!" On the other hand, if the conditions are such that he has to put in a poor one, he will be equally indifferent and undisturbed if the filling is seen and condemned. His love of science will be so strong that his only concern will be to do the true thing, and the true thing will be the right one, and in doing this he will show that he has the level head before mentioned. And the chances are that the true and right thing will be the moderate one. In making the practical application of this principle, he will be reminded of his boyhood's copy book, in which he wrote: "Moderation in all things." In dental practice he will not use gold exclusively; on the other hand, he will not assert without a qualifying phrase that it is a failure. He will not use the plastics without regard to the age of the patient—first and second childhood—and the condition of the teeth, and as he grows old himself he will be on his guard against them because they are easy to use. This danger is an insidious one, and may creep on an elderly man as stealthily as the years have done. We have all doubtless heard gutta percha called the "old man's filling material."

There is great danger from plastics, because they are so easily used, and particularly with men who have to submit to the tyranny of large practices, and who have to use them constantly for temporary purposes. They do so well that it is easy to slip into the habit of using them more generally, and now and then the pendulum quite unconsciously may swing too far the other way. If moderation were observed, it would not swing at all, but would hang balanced between the two extremes. If our imaginary dentist is young, but desires to be wise, he will be on his guard against the universal overconfidence of youth. Though the vigor in his blood may make the unattainable seem easy, his mind will be full of interrogation points, and an introspective habit will save him from making endless mistakes. He will be careful about the extraction of the sixth-year molars because some "big-wig" has said they must come out, and he will be slow in undertaking the regulation of teeth that in a few years will regulate themselves. He will not get frightened out of his wits and lose heart because the teeth of some young patients are soft and seem to be on the verge of destruction; but he will brace up and plaster them up in the best way possible, knowing that a few years will work wonders in the improvement of their condition. He will not lie awake at night and worry about articulation, and decide to build up or down with gold teeth that will be articulated sufficiently for all practical purposes in nature's own way in a few years. He will remember that millions of men whose teeth were badly articulated have lived long and useful lives; and millions more, in their day and generation, have fulfilled their mission without any teeth at all in their old age! Even George Washington was toothless, and who will say that he lived in vain? I say he was toothless, for who that ever saw the numberless masses of carved bone that he is said to have worn would consider them teeth? I suppose it must be believed that he did wear them all, such as they were, for he could not tell a lie about them; and if *he* could not, and did not, it is only reasonable to think that no one else would care to. I am not aware that history has ever told us why he could not tell a lie. Perhaps it was because his articulation was so bad. I think these carved bones that we see in museums, as well as in the hands of private collectors, might afford an important clew to the historian. There must have been some such natural impediment, for without it it is hard to believe that a man of his force of character could not tell a lie.

Our young professional friend, desiring to be wise early, will be very slow to condemn as bad practice that which does not conform to his own opinions; and he will not be very ready to say that a certain piece of work was done badly, when he knows little or nothing of the conditions under which it was done. He will be fortunate if he has the faculty, which is rare indeed, of watching for and profiting by the experience of those who have gone over the course before him.

Wisdom cannot be put on and off as one's coat. It is a slow growth. It has been truly said that by the time men are old enough to know how to live they have to die. By the time a man has seen a set of teeth develop from early childhood to adult life, and has noted all the changes that occur during that time, he may be ready to practice dentistry wisely in its widest sense, though by that time he may have lost the pliant body that made the performance of difficult operations in cramped positions comparatively easy.

It has often been said of the women who have played Juliet that by the time they were old enough to comprehend the deep significance of the character they were too old to invest it with that sweet quality of girlhood that is always its greatest charm. But age and experience even may not always bring wisdom, for there may be lacking that combination of faculties that makes up what I have called the level head.

This imaginary dentist of whom I speak will, without regard to his age at this time in our profession, find ample need in various ways for the exercise of that moderation of which Dr. Jarvie speaks. He will be in danger of being led away by the vagaries of bridge work. He will find many of his professional brethren gone mad upon that subject; and, caught by the current, he may be swept along and carried out to sea, where, tossing about on the uncertain waters, he may comprehend what good, solid land he has drifted away from. He may grind down and partially destroy good natural teeth in order to put in one or two artificial ones which cannot be removed and cannot be kept clean, and which the patient for years had gone without, and yet had not been made specially conscious of their loss. He may forget that before he was born teeth attached to skeleton plates were put in and held firmly and comfortably, being attached by clasps in such a way as not to injure the natural teeth, and yet so as to allow removal for cleansing or repairs. He may not perceive that the natural teeth rest in a cushioned socket that allows a little play, and that when his immovable bridge is cemented fast the teeth are held in an immovable manner, nowhere duplicated by nature. The bridge may eventually come out, but when it does the teeth may come out with it. If this is considered an extreme statement, my reply is that I have seen it occur so many times that I consider it should be taken into account as an important factor. I have taken out a great many immovable bridges; though I have never yet taken one out without being first requested by the patient to do so, for I try to avoid prejudice against this, as against all other special lines of practice. There is no intention in this to condemn removable bridge work. That is only a modified and greatly improved form of applying an old-fashioned skeleton plate fastened with clasps. In the matter of gold crowns our professional artist may follow the fashion of the day, and use them so near the front of the mouth that his patient's speech will be gold, and even his silence golden. Perhaps it is a good advertisement, and leads some people to say: "Who is your dentist?" He may have strabismus, as he evidently does not see that many people ask, "Who is your dentist?" in order to avoid him. The streets, the cars, the churches, and the theaters are so full of people with these glistening gold crowns that it should make one who really cares for the æsthetic side of his profession to hide his head in shame and sorrow. In the early days the jewelers contributed to our ranks. In these later ones it sometimes seems as if we had gone around the circle only to come back to whence we came. The setting of diamonds in the teeth is further evidence that some have not lost their early art. Having eyes will we never see, and pretending to some comprehension of æsthetics will we continue to ignore the universally accepted idea that art that conceals art is the highest? and must we go on inserting in the very mouths of our patients those glistening structures that so completely give them and us away?

Gold crowns placed upon the roots of teeth, as one would place a thimble upon the finger, make the strongest and most durable crowns known to our profession; but our patients are not barbarians, struggling for existence and living in the woods on roots and nuts, that require strong teeth for their mastication. Instead of that, they are civilized beings, which means that they have acquired pride of appearance, and have their hair cut, and wear clothes, and try to hide from each other all the physical defects that are the outcome of that very civilization. And yet it is common for dentists to publish the fact that their patients have poor teeth by placing gold crowns upon their bicuspids; and once I saw in the mouth of a lady a gold crown placed on a canine, and put there by a man who has a national reputation. A modern successful novelist carries through one of his books a man whom he describes as a shining example of American dentistry. To see a glistening gold crown in the mouth of a person is like seeing, as one does in so many hotels in Europe, the sign: "American dentist." The sight of either gives a peculiar sensation near the diaphragm, and makes one wonder why it is that such a beneficent art can be so paraded and so degraded. The sane, moderate man does not do these things. His mental make-up is such that he cannot. If he could be convinced that he ought, he still will not, for he cannot offend his artistic sense even as readily as he can his common sense. Emerson said modern civilization had given the world dentistry and gum shoes. He did not say which he considered the greater blessing. He probably never saw a gold tooth.

We are so tickled with the things we can do by the help of all these modern appliances that we go on doing things that we shall look back upon with wonder and regret when our profession shall have advanced to a fuller appreciation of its true mission, which Oliver Wendell Holmes said was " to retain the appearance of youth and to smoothe the wrinkles out of old age." But gold crowns were not known when he wrote that sentence. There is not time in a paper like this to tell half the things a moderate man will do, nor one-quarter of the things he will not do. To go farther down the list would only exasperate your patience, which is surely exhausted. In rather a jocular and not a very logical manner, I have gone all round Robin Hood's barn in the consideration of the subject of moderation in practice, and in the matter of moderation in statement I have given a good illustration of the very thing I have preached against. But possibly you may be willing to admit that the subject is one that allows some latitude, and the impromptu manner in which the paper has been prepared will temper a little, I hope, the severity of your criticism. What I have written has been dashed off in an unstudied manner, and with no time for revision, and without any attempt, inconsistent as it may seem, to eliminate the personal equation. I have only one more thought to express. This imaginary dentist, who, I have claimed, should be so scientific, and to whom I have tried to give a level head, must also be moderate, even with his scientific attainments. I have held him up before you as a cold, exact, unruffled, mathematical, scientific chap, well suited for the lecture room or the debating society. Having all these attainments, he might still be a poor stick in the operating room. An operator should have warm blood in his veins. Appreciating the weakness and the needs of our common humanity, his heart should be worn on his sleeve, where it can be easily pecked at. It should be full of tenderness for those of any age who need gentle treatment, and it should be warm with love, particularly when little children come to him with the freshness of spring in their faces. What would you think of him if, when the little souls ask for a story, he should repeat the differential calculus? He may have been so absorbed with his scientific studies that perhaps it is the only "Mother Goose" poem he knows. He can twirl a drill better than he can turn a joke or a pleasant phrase. He readily explains that it is not the nerve, but the dental fibrillæ, that he cuts. Does it hurt any less because he is cutting something that has a Latin name? No, gentlemen, the dentist should be an all-round man. He should have many sides, and "moderation" ought to be stamped on every one of them.—*International.*

PREVENTIVE DENTISTRY.

BY I. P. WILSON, D.D.S., BURLINGTON, IA.

THAT very many of the operations performed in a dental practice could have been avoided, had the teeth been properly cared for, there can be no doubt. The masses of people do not understand the importance of hygienic dentistry. Many who observe the most scrupulous care as to personal cleanliness, and are even fastidious as to what they will eat and wear, and religiously guard every avenue of approach for disease that surrounds their homes or their places of business, yet tolerate offensive roots or stumps of teeth in their gums, with tartar and decomposed food upon their teeth. These impurities vitiate the air that they breathe, and poison the food that they eat in the first process of digestion, and thereby render impure the blood which must supply the continued demand made upon it for reparative material. The masses of people need to be educated regarding this all-important matter. Who shall be the teachers? Were it not that parents, as a rule, are ignorant of the consequences of the neglect referred to above, we might excuse ourselves and leave the rising generation in the hands of fathers and mothers. But we cannot, as a profession, afford to do this. In the first place, a dentist should set an example of cleanliness. His teeth should be scrupulously clean and his breath pure. He should not hesitate to speak frankly and freely to his patients regarding a personal matter that has so much to do with health, not only of the dental organs, but of the entire organism. Sensible people will appreciate such advice and instructions; while others, who are more thoughtless, I had better said more senseless, will perhaps manifest indifference, and they may give you to understand that they do not appreciate any gratuitous advice, as they may deem it, pertaining to their personal habits. The physician or the dentist who will stand by and see his patient's health, if not his life, threatened with danger, and not fearlessly sound the alarm, is not worthy of his high calling. Not only do the interests of our patients demand instruction at our hands, but our personal interests demand it. It is the privilege of every dental practitioner to build up a clean, desirable practice that will not give him discomfort nor endanger his health. Let me emphasize more fully what I would say with an illustration: Mrs. A. requests you to kill the nerve, treat, and fill an aching tooth. On examination, you find her teeth coated with tartar and decomposed food. You find some dead useless roots or stumps of teeth in her mouth; you also find that a number of her teeth are decayed and need filling, and, as a matter of course, you find Mrs. A. with an exceedingly unpleasant breath, and by no means a desirable patient upon whom to operate. You very properly suggest that a general renovation is necessary; that after an application has been made to devitalize the pulp and relieve her of pain, her teeth must next be cleansed and then *kept* clean. The necrosed roots must be extracted and the decayed teeth filled. If this course of treatment is objected to by the patient, freedom from pain being the only object sought, I should promptly decline treating and filling said tooth, having too much respect for my olfactory nerves, as well as my precious health, to voluntarily place myself under such contaminating influences. It seems to me that in such cases our duty is plain. We cannot affort to jeopardize our own health, nor is it right that we should encourage human beings in totally disregarding hygienic laws. This may seem like heroic treatment, but nothing else will sufficiently arouse some people and awaken their self-respect and pride so as to stimulate them to action.

But I wish now to call attention to the thought that was first in my mind when I sat down to write this short paper. It is a well-known fact that, as a rule, the teeth of boys and girls decay more readily during their teens than in subsequent years. The reason is obvious, and need not be dwelt upon here. The preventive treatment I have to recommend is simple and effective, especially in the bicuspid and molar teeth. When these teeth first emerge from the gums the enamel fissures are open and a fine-pointed excavator can readily be forced down into the immature dentine. The imperfectly developed enamel in these fissures is sometimes mistaken for caries, and is treated accordingly. Instead of attempting excavation in such cases, let the fissures be thoroughly syringed out with warm water, then dehydrate with alcohol, dry thoroughly, and fill with cement. Then place a little of the dry powder over the filling and press it firmly with the finger, forcing the cement into the remotest recesses of the fissures, and excluding the moisture, if necessary, with the finger still upon the filling, and holding it there until crystallization has taken place. Then dress off the surplus, and in nine cases out of ten decay has been prevented, and without causing any pain from excavation. But if decay has been prevented for only a few months or years, and the same treatment is then repeated, and the tooth is preserved through those early years of immaturity, and is afterward filled with gold, more of the tooth structure has been preserved, its natural color retained, and much less pain has been inflicted. I need not enumerate the different conditions of the teeth, particularly in youth, and in pregnant and nursing women where cement may be used to great advantage in preventing decay. Preventive dentistry should be practiced more by the profession than it is, and our patients will not be slow to appreciate our efforts and remunerate us more willingly for preventive treatment than for more taxing services.—*The Dental Digest.*

PORCELAIN-FACED BICUSPID CROWN.*

BY A. W. M'CANDLESS, D.D.S.

According to the programme, I am supposed to read a paper, the subject of which is, "Porcelain-faced Bicuspid;" and apprehensive lest any should make the error of anticipating something new, I will tell you at the outset that the subject should be: "Porcelain-faced Bicuspid Crowns." The method of making this crown is by no means a novelty, as I have explained it a good many times; but your Executive Committee were kind enough to suggest that there were some points in the *modus operandi* not exactly clear to every one. The root having been properly prepared, a band is fitted thereto exactly as though an ordinary telescope or shell gold crown were to be made. The buccal side of this ferrule is cut out with curved shears at about where the porcelain facing is to be placed. Secure a perfect articulation in the usual manner, and then tack the cusp to the ferrule at a point the farthest from the porcelain; now, with the curved shears, cut away the gold of the cusp down to the point of the cusp, approximating the shape of the porcelain face at that end. Grind the facing, and trim the opening in the gold that is to receive it, until the fit is fairly accurate, but not absolutely so, however, as this is entirely unnecessary, and requires too much time. When the facing has been ground to the proper shape, remembering to always make it a trifle smaller than the space, to allow for the thickness of the gold backing, bevel the edges of the porcelain all the way around, then when the gold backing is thoroughly fitted, which is only accomplished by thorough painstaking, annealing the gold often, and gently tapping to place with a small riveting hammer, place the tooth, backed with pure gold of thirty gauge, in position. Catch the gold backing to the ferrule and cast with sticky wax, slip the porcelain off, invest the gold in long-fiber asbestos, moistened with water, leaving only enough gold exposed so that with a small particle of solder the backing may be united to the ferrule, remove the investment, fill the joints, where the solder is to flow, with wax, fill the entire interior of the crown with a paste of plumbago, or stove polish, so that the solder will *not* flow where you would not have it go, then complete the soldering of the joints and flow up sufficient solder to give the proper contour to the finished crown. At this point a lower grade of solder is used for filling the cusps. The porcelain facing is slipped to place, the gold filed or ground to the proper shape and finish; and if the work has been properly done up to this point, a perfect joint between backing and tooth is the result. Remove the facing, then with a thin film of cement between the gold and the porcelain force the facing to the place. After the cement has set bend the pins of the tooth carefully outward from each other, and the facing is held with sufficient strength. In making these crowns 22 carat gold, 28 gauge, and 22 carat solder is used, with 14 carat solder in the cusps. After the crown has been finished and polished send it to a gold plater, who for ten cents will plate it with pure gold, which gives it a very beautiful appearance. The plating is not designed to cover any pits or other defects caused by faulty manipulation, as it brings them out and magnifies them; but a crown thus treated will not tarnish in the mouth, and the plating is quite durable where no friction comes, and where friction is the tarnish will not come. There are a good many things to commend this form of crown: natural appearance, strength, and utility. No risk is incurred in soldering, the color preserved, permitting more artistic effect in matching the natural teeth and the absence of that blue line so common at the cervical margin of soldered teeth.—*Dental Review.*

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*Read before the Northern Illinois Dental Society, October 17, 1894.

LEGAL RESTRICTION OF NOSTRUMS.

We learn with much satisfaction that a movement has been set on foot in Mississippi having for its object the prohibiting, by legislative enactment, of the use of nostrums in connection with the extraction or filling of teeth.

Certainly the ghastly record of fatalities consequent upon the ignorant use of cocaine preparations is long enough to demand a halt, and that the use of this drug be placed on a clearly defined legitimate basis.

Cases of accident, fatal, or so nearly fatal as to constitute a grave menace to life, are almost daily reported in the use of the cocaine preparations. The note of warning has been sounded by authorities in this matter whose experience entitles them to credence and full consideration. The record of fatal cases of cocaine poisoning which has been published by Dr. Mattison, of the Brooklyn Home for Habitues, is an unanswerable proof of the toxicity of cocaine, and it shows, moreover, that the conditions which limit its safe use are by no means clearly defined.

If, then, we have such a narrow margin of safety in the use of cocaine in accurately known doses, the use of a nostrum containing cocaine, in which the existence of the drug is either denied or is of unknown amount, becomes little short of criminality. It certainly lacks but the one feature of statutory definition to make it so.

The indiscriminate use of cocaine nostrums for the painless extraction of teeth, often by men who are ignorant of the most elementary features of the action of the drug, and the wholesale mutilation which such practice entails upon the community, is an open disgrace to our profession. The time is fully ripe, by reason of the known dangers incident to such practices, for securing a proper legislative control which shall relieve the community of this menace to life and health, and the dental profession from a blot upon its record. The plea that the ethical dentist does not use nostrums, even if true, does not relieve the legitimate practitioner from the obligation to see to it that they are not used by those who make no claim of allegiance to professional ethical standards. It is a matter which should receive the earnest consideration of our State and national associations. The mere passing of a resolution condemning the use of the nostrum is without effect upon either the traffic in, or the use of, these abominations. What is needed is that the matter be put into the hands of an earnest and intelligent committee, with instructions to secure State legislation prohibiting the injection of a a nostrum into the human circulation. Restrictive legislation of this character is clearly within the constitutional right of the State under its police powers. If the case were properly prepared and brought before our legislative bodies, there can scarcely be a doubt as to a successful issue. Many of our State laws, in defining who shall practice dentistry within the meaning of the act, make the provision that no one shall be prevented by the act from extracting teeth. Advantage of this provision is taken by the nostrum charlatan, with no proper knowledge of dentistry, to prey upon the ignorance of the community, and conduct a more or less lucrative business in the painless extraction of teeth. It has been suggested that the provision above noted, by virtue of which these quacks are allowed to go unmolested, could, by a strict interpretation, be used to bring their business to an end. As the proviso clause has reference only to the extraction of teeth, it only need be demonstrated to a jury that the injection of a drug into the circulation is an operation of possible danger, requiring educated skill in the performance, and is a separate and distinct operation from the extraction of teeth, the only operation contemplated by the proviso. If such an interpretation of the act could be had, it would necessarily deprive the illegal quack of the only attractive feature of his business.

The main question, however, remains to be solved, and active measures should be undertaken to prohibit the injection of any unknown drug or drugs in unknown quantity into the circulation.

There is no excuse for the use of cocaine nostrums. When the drug is used it should be used with full knowledge concerning it, and any properly educated practitioner either has such knowledge or has ready access to it. The continued use of cocaine nostrums in the light of our present knowledge is simply paying high tribute to the greed of the nostrum vendor, and dallying with a source of danger which, when its logical result in the shape of an accident ensues, should deprive the author of it of all sympathy from his colleagues or mercy from a jury.—*Editorial in Dental Cosmos.*

DISEASE OF THE ANTRUM OF HIGHMORE.

BY JOHN A. WYETH, M.D., PROFESSOR OF SURGERY AT THE NEW YORK POLYCLINIC AND HOSPITAL.

I WISH to show you a case of disease of the antrum of Highmore. I do not know of any class of cases that are more difficult to treat than these, which are usually the result of an osteitis of the upper jaw. If allowed to go untreated, the inflammatory process may find its way through the thin wall of the cheek, forming ugly sinuses; or it may break through into the posterior nares, which is perhaps the better way, although it does not result in a cure. During the past year I have seen perhaps a dozen of these cases. It is very rare to find two cases that behave alike. This man has an abscess of the right antrum which has broken through just underneath the right ala nasi. Here you can see the opening of a small sinus, through which pus exudes when gentle pressure is made. The pus seems to contain nothing but the normal elements of suppuration. This patient has had one of his incisor teeth removed, as it was thought that was the cause of his antrum trouble. The tooth, however, was found to be perfectly healthy; and if it had been put back in its socket again immediately, it would have grown there and served a useful purpose. The normal point of drainage in disease of the antrum is through the alveolus of the second molar tooth. If you pull out that tooth, you find that its roots project into the antrum, and the cavity may be drained in that way. To some people, however, it is a very annoying thing to lose the second molar tooth, and furthermore, by this method of drainage, the pus from the antrum is continually dripping into the mouth. To avoid this, we have learned to treat these cases in a little different manner. We enter the antrum through the buccal cavity just above the root of the second molar tooth, at the point where the wall of the cavity projects prominently. After throwing in a few drops of a four per cent. solution of cocaine, a hole can be bored into the antrum by means of a small hand drill, and you can then introduce a probe and learn whether the disease is the result of an osteitis, or a polypus, or ozæna, which has extended from the nose. You are then, too, in a position to treat the cavity and restore its normal function, which is to warm the inspired air before it enters the lungs. You can wash it out as frequently as you deem necessary with boric acid solution, or peroxide of hydrogen, or with anything else which you think is effectual, in your experience. In one case upon which I recently operated we found about half a dozen polypi in the antrum, which filled the cavity and squeezed each other to death, producing an osteitis. In that case the polypi constantly recurred, sprouting from the walls of the cavity like so many stalactites. I advise you, in the treatment of these cases, to leave the teeth alone, if possible, in spite of the fact that nearly all the text-books tell you to extract the second molar tooth. You can get just as good drainage, without destroying a useful tooth, by operating in the way I have suggested above.—*International Journal of Surgery.*

THE REAL VALUE OF THE MEDICINAL PEROXIDE OF HYDROGEN PREPARATIONS FOUND IN THE MARKET.

BY H. ENDEMANN, PH.D., CHEMIST, FORMERLY ASSOCIATE CHEMIST TO THE NEW YORK CITY BOARD OF HEALTH.

In this valuable article the writer states that a standard solution of medicinal H_2O_2 must answer the following tests: 1. It should contain at least 15 volumes of available oxygen. 2. The quantity of free acids contained in 100 cubic centimeters should require not less than one cubic centimeter and not more than three cubic centimeters of normal volumetric soda solution, to be made neutral. Such a small quantity of free acid is not objectionable. 3. It should not contain any soluble baryta salts. 4. It must be free from sediment.

The different brands which he found on the market, being submitted to the above tests, gave the following results:

BRANDS OF H^2O_2 SOLUTIONS.		Volume of Available Oxygen Determined by Means of a solution Containing 5.665 Grams of Permanganate of Potash per Liter of Distilled Water.	Residue Obtained from 100 C.C. of Peroxide of Hydrogen dried at 120 Degrees C.	Acidity Expressed in Cubic Centimeters of Normal Volumetric Soda Solution for 100 C. C. of Peroxide.	Baryta Found in Soluble Baryta Salts Contained in 100 C. C. of Peroxide.
No. 1. John Bene's	H_2O_2 (Medicinal)	10.50	0.1886	2.19	None.
No. 2. Hydrozone..		**27.35**	**0.2180**	**3.11**	“
No. 3. Larkin & Scheffer's	H_2O_2 (Medicinal)	9.65	0.1206	6.75	“
No. 4. Mallinckrodt's	“ “	9.55	0.1408	1.43	“
No. 5. Marchand's	“ “	**16.55**	**0.564**	**1.29**	“
No. 6. McKesson & Robbins's	“ “	10.95	0.0540	0.44	“
No. 7. Merck & Co.'s	“ “	0.50	0.2418	4.57	“
No. 8. Oakland Chemical Co.'s	“ “	10.50	0.0382	0.34	0.0017
No. 9. Peuchot's	“ “	10.60	0.4674	1.77	0.0018
No. 10. Powers & Weightman's	“ “	8 40	0.1830	2.03	None.
No. 11. Pyrozone, 3 per cent.	“ “	11.20	0.0534	0.76	“
No. 12. Rosengarten & Son's	“ “	3.10	0.1002	0.25	“
No. 13. Smith, Kline & French Co 's	“ “	6.15	0 0880	2.6	“
No. 14. E. R. Squibb's	“ “	12.40	1.004	12.04	“

By referring to this table it is easily noticed that brands No. 7 and No. 12 are valueless.

The brands No. 8 and 9 are not fit for medicinal uses, owing to the fact that they contain traces of soluble baryta salts.

The brand No. 3 has a heavy sediment of sulphate of baryta, which may be considered inert toward the system, but it is certainly detrimental to the keeping qualities of this preparation.

Brand No. 14, which is sold as a ten-volume solution, is really twelve volumes, but it is too acid.

Brand No. 5, which is sold as a fifteen-volume solution, is really 16.55 volumes—viz., about 10 per cent above the standard.

The brand No. 2, which is sold without any mention of volume, is really a 27.35 volume solution—viz., 90 per cent above the standard.

None of the other brands come up to the standard, but on the contrary they run from 35 to 55 per cent below.—*Abstract from the Times and Register, of Philadelphia, Pa., December* 15, 1894.

Fatal Effects of Sewage.—Have you ever kept goldfish? If so, you know that it is necessary to have growing vegetation in the jar the fish inhabit; and why? Because the waste or sewage from the fish themselves, if consumed by them, will prove fatal to them. All animal waste must pass through vegetable life, back again to animal life, and if this natural cycle be interfered with, fatal results ensue. That which is true of goldfish life is equally true of human life; if sewage, which is the waste of human life, comes back to us in the water that we drink, the air that we breathe, and the food that we eat, without having previously passed through vegetable life, health and life will suffer therefrom. Animal death supports vegetable life, and vegetable death maintains animal life; this is nature's cycle of organic matter, and it cannot be interrupted with impunity.—*Annals of Hygiene.*

Rheumatism.—This malady is entirely preventable in one or all of three ways: First, and most important, by abstaining from such articles of diet as are known to consist very largely or almost entirely of nitrogen, such as lean meat, cheese, and milk; second, by taking in as much oxygen by means of active exercise as may be necessary to oxydize all the nitrogen in the blood; and third, if one is unwilling or unable to eat less meat and take more exercise, then the next best thing to do is to drink enough pure water to dissolve as much of the unoxydized nitrogen as possible, and thus to eliminate it from the blood by means of the kidneys.

Extracts.

NEW MEANS OF LOCAL ANÆSTHESIA.

One Dr. K. L. Schleich, of Austria, claims to have discovered that absolute immunity from pain, even during protracted operations, may be obtained by subcutaneous injection of a sugar or salt solution, or of merely cold distilled water; that the results induced are to all intents and purposes identical with those obtained by like employment of cocaine. He adds: "The patient may remain perfectly conscious during the amputation of hand and foot without undergoing the tortures so often inflicted upon the battlefield, or the exceptional dangers of syncope ever present in the operating room when general narcosis is resorted to."

It is declared that this discovery has already borne the test of several experiments, and is about to be applied in the hospitals of Vienna. The explanation of the phenomenon is: Local insensibility to pain is induced in the case of cocaine by purely chemical changes, while cold water or solutions of sugar and salt act mechanically through high pressure and low temperature. Under the influence of high pressure and sudden low temperature, the blood and lymph are driven from the places operated upon to where the pressure is less. The tissues are thus deprived of their supply of blood, and temporary paralysis of nerves results.

The foregoing seems to have met with favor in numerous quarters, and in one instance, at least, a surgeon of authority affirms that "its importance is all the more undoubted, seeing that if in a given case cold water alone should fail to produce the needful degree of insensibility, a weak and absolutely harmless solution of cocaine would prove certainly efficacious." Whether true or false, it is hardly probable that surgeons will give up the use of cocaine, which is deemed certain, in favor of a method which will always be apt to carry with it a feeling of indefiniteness.—*Medical Age.*

A REMARKABLE OPERATION.

At the Charing Cross Hospital, Mr. J. Astley Bloxam, the senior surgeon, whose skill, care, and originality in the special branches of his profession are so well known, has just performed a remarkable operation. It appears that a few months since a young man without a nose asked the authorities whether they could obtain a real nose for him. To oblige the applicant an amputated finger of another patient was grafted onto his face, but it was found that amputation had caused the finger to die. The noseless man, nothing daunted, then agreed to the surgeon's suggestion that one of his own (the patient's) fingers should be cut off to furnish the nasal organ, but in order that the finger should not be wasted in the event of the operation being unsuccessful, the patient's arm was incased in plaster, and for four weeks he had to hold his finger to his face in hope of its taking root. This it did. The finger was then taken off the hand, and now remains fixed as a nose. It has been manipulated so that it is no longer to be recognized as a finger, and the process of shaping it is being proceeded with. This is stated to be one of the most remarkable operations on record.

A NEW METHOD OF NARCOSIS.

At a meeting of the Berlin Medical Society, November 28, Dr. P. Rosenberg described a new method of combined anæsthesia, which he trusted would entirely prevent the lethal action of the chloroform on the heart. He has demonstrated by experiments on animals that cardiac syncope during chloroform narcosis is due to reflex irritation originating in the nasal mucous membrane, and transmitted to nerves having a paralysant action upon the heart and respiration. By anæsthetizing the mucous membrane of the nose with a spray of cocaine these reflex disturbances are prevented, and in view of the fact that cocaine is an antidote to chloroform, its absorption will in another way obviate the injurious effects of the latter. If the nose is previously cocainized, anæsthesia is more readily induced, attended with less disturbances, and especially is free from after effects. The patients wake up rapidly, and experience none of the usual discomforts.—*International Journal of Surgery.*

GOLD MINES IN CEMETERIES.

A writer in *Le Temps*, of Paris, has been traveling in America, and of course relates his "impressions." What struck him particularly was not the falls of Niagara, the inquisitiveness of reporters, or the consumption of pie; but the fillings in American teeth. He has consulted the statisticians, and finds that the amount of gold annually pounded into our dental cavities reaches the respectable figure of eight hundred kilograms, representing a value of half a million dollars. All this precious metal is buried with the Yankees when they die, and consequently at the end of three short centuries the cemeteries of the United States will contain gold to the value of $150,000,000. He thinks this will prove too tempting to the practical mind of the future American, and foresees the day when companies will be organized to mine the cemeteries and recover the gold secreted in the jaws of deceased ancestors.—*Ex.*

PROF. ALFRED L. LOOMIS, M.D., of the University, City of New York, died of pneumonia January 23, 1895, after a few days' illness. Prof. Loomis is well known by his work on "The Principles and Practice of Medicine," also his work on fevers and acute infective diseases, and that of the diseases of the heart, lungs, and kidneys. At the time of his death he was editor of the great work which is to appear, four volumes this summer, to be called "The American System of Medicine.

ODOL.

THIS name is applied to a popular preparation now extensively used in Europe as an aromatic and antiseptic tooth and mouth wash. The composition, according to Dr. Zikes, of Vienna, is as follows:

Oil of salol	4 parts.
Saccharin	0.2 parts.
Alcohol (94 per cent)	96 parts.
Perfumed with oil of peppermint	60 drops.
Oil of anise	6 drops.
Oil of fennel	2 drops.
Oil of cloves	2 drops.
Oil of cinnamon	1 drop.

—*Pacific Druggist.*

TO REMOVE RUST FROM INSTRUMENTS.

DR. SANGER advises placing surgical instruments which have rusted in a saturated solution of chloride of tin for twelve or fifteen hours, after which they should be removed and washed with hot water and soda soap.—*St. Louis Courier Med.*

A LOCAL ANÆSTHETIC.

Chloroform	10 parts.
Æther	15 parts.
Menthol	1 part.

When used as a spray for one minute on the skin it produces local anæsthesia for three minutes.

Editorial. . . . .

"MODERATION IN PRACTICE AND IN STATEMENT."

It is not our custom to publish lengthy selections, but in this issue we have departed from the rule and reproduced from the *International Dental Journal* for March a paper read by Dr. S. G. Perry at a meeting of the New York Odontological Society, November 20, 1894, and we ask of our readers its most thoughtful perusal. A careful study of it will benefit any one.

The indulgence in a bombastic style of delivery has come to be, by many, regarded as a kind of eloquent oratory, and the use of a profusion of double-coined technicalities an evidence of superior learning; that to have influence and weight one must make use of high-sounding adjectives and extravagant claims of personal successes; that to acknowledge a failure, a mistake of diagnosis, or manifest the least ignorance on any subject or line of practice, is a disgrace—when, in point of fact, at no time in the history of the world was the reverse more the truth than at present.

Who is it that is not tired of the vain efforts to make it appear that dentistry is so "wonderfully and exactly scientific" that it calls for a higher order of mental capacity to acquire a knowledge of it than other professions?

We have wondered what impressions such statements make on others. We have suffered mental anguish when listening to them, and it is truly embarrassing when they come from the lips of men who at the same time break every law of construction, mispronounce the commonest words, and even violate the simple rules of grammar.

The time is not come when dentistry can be placed upon a pedestal and boastfully proclaimed as the most exalted, scientific, and learned of professions.

There is much that is scientific in it, many scientific works about it, scientific men in its ranks, and not a few learned and scholarly; but do not attempt to magnify them, and place it in a false position before the world.

Work, experiment, settle by coming to definite conclusions, many disputed questions, and in time it must find its proper place. It cannot be forced, nor can it be hindered. And in the meantime let "Moderation" be the watchword.

DISTINGUISHED VISITORS.

DR. S. C. G. WATKINS, of Mt. Clair, N. J., First Vice President of the American Dental Association, recently visited Nashville, and read a paper on "Association Work" before the section of Oral and Dental Surgery, in the Academy of Medicine. Dr. Watkins was accompanied by Mrs. Watkins, and they were *en route* to New Orleans for pleasure. They were the guests of Dr. J. Y. Crawford. Dr. Watkins's friends enjoyed his visit, and our readers are only temporarily deprived of the pleasure of his paper, which should appear with this issue.

Dr. A. W. Harlan and wife, of Chicago, spent two days in Nashville the last week in March. Dr. Harlan was taking a little needed rest. We clip from the *Daily American* of March 22 the following personal:

> Dr. A. W. Harlan, of Chicago, who awarded the prizes last night, is in many respects the most noted dental surgeon in the world. He was the first man to call attention publicly to the propriety of celebrating the discovery of America by Columbus, which resulted in the great Columbian Exposition at Chicago, and the World's Fair Directors gave him public acknowledgment of that fact in a magnificent dinner tendered him. He is ex-Secretary General of the World's Columbian Dental Congress and an esteemed ex-President of the American Dental Society, and wherever the science of dental surgery is known Dr. Harlan's name occupies a high place of honor. The Doctor and his wife are stopping at the Duncan for a few days.

Dr. Harlan was a guest one evening of the Academy of Medicine, Section of Oral and Dental Surgery, and added much of interest to the meeting.

Dr. H. E. Beach, of Clarksville, Tenn., President of the Southern Dental Association, and Secretary of the State Board of Dental Examiners, called at our office on his return from a visit to Knoxville recently. Dr. Beach says the meeting to be held at Atlanta will be the largest and best the South has ever held.

These gentlemen were warmly welcomed. Come again!

THE CONNECTICUT QUARTERLY.

WE are in receipt of the initial copy of this handsome new quarterly, published by the Connecticut Quarterly Publishing Company, Hartford. It contains, besides other interesting matter, "The History of Anæsthesia," by Dr. James McManus, of Hartford, which is illustrated with half-tone portraits of Drs. Horace Wells,

G. Q. Colton, and J. M. Riggs, the three persons whose names must forever be remembered in connection with the discovery of the application of anæsthesia by nitrous oxide gas to surgery. It contains also a full-page illustration of the bronze tablet, recently placed in front of the building in which the first tooth was ever painlessly extracted, and at that time the first painless surgical operation of which the world had any knowledge, and about which there was no concealment.

The article and photographs are worth the subscription price of the quarterly, which is fifty cents a year. Single copies can be had by sending fifteen cents to the publishing company.

OUR STATE ASSOCIATION.

In this issue will be found a message to the dentists of the State, issued by President Richards in advance of the meeting. It indicates that he has his head full of plans, and his heart and soul enlisted in the success of the meeting in July.

If only the members of the Association, and those of the profession who should be members, will follow his enthusiastic example, and each endeavor to present something, it may not be new or novel, or even original; but if it has served a good purpose, overcome a difficulty, accomplished some object where an old method or remedy had failed, it is sure to be of interest to some one. The greatest teachers are not always those who have the greatest amount of learning. From the humblest some of the greatest truths have been obtained.

Much interest is being taken in this meeting, and it is sure to be quite well attended.

MARRIAGE NOTICES.

Dr. Theodore K. Barefield to Miss Sarah B. Tartt, at Lauderdale, Miss., Wednesday, November 21, 1894.

Dr. L. G. Nesbit, of Aberdeen, Miss., to Miss Mattie Barry, of Ardmore, Ind. T., January 9, 1895.

Mr. Walter H. Miller to Miss Mattie, daughter of Dr. and Mrs. J. F. Kendrick, Bowling Green, Ky., February 14, 1895.

Dr. L. B. Torrence to Miss Jessie McAdams, January 16, 1895, at Chester, Ill.

Dr. A. H. Grigsby to Miss Mattie Montgomery, of Centerville, Tenn., December 26, 1894.

Commencements. . . . . .

DEPARTMENT OF DENTISTRY, VANDERBILT UNIVERSITY.

The Commencement exercises of the Department of Dentistry of Vanderbilt university were held Wednesday evening, February 27, in the university chapel, and were witnessed by a large audience. Thirty-seven young men and one lady received the degree of Doctor of Dental Surgery. Those who were present appreciate the fact that Vanderbilt is fast becoming one of the leading universities in the country in more departments than one. The attendance and work of the dental department has been especially flattering this year; and while many universities have recently had a smaller number of students on account of the financial stringency, Vanderbilt has suffered none. The roll of students in the dental department is composed of representatives from all over the United States, which goes to prove that Vanderbilt is not merely exerting a local influence.

The programme rendered was an exceedingly interesting one to the large assemblage present, consisting of a report of Dean Morgan, the conferring of degrees by Chancellor Kirkland, the valedictory, by Mr. Henry Edward Peach, and music by the Vanderbilt Glee, Banjo, Mandolin, and Guitar Clubs.

The exercises were opened up with prayer by Bishop R. K. Hargrove. The report of Dr. W. H. Morgan was especially interesting, as he reviewed the work and the many new methods adopted in this department. He said that this had been a most satisfactory session, both in point of good work done and because this year witnessed the largest number ever registered in this department. Continuing, he said: "The students have had no lack of material for clinical practice. Among our number we had two ladies, one of whom graduates to night; the other has entered an occupation of a higher order—wifehood. Your profession requires honesty of purpose and hard work. Be firm and gentle with your patients. You will have to give much pain. The golden rule is applicable here more than anywhere else. Do your work well and impartially at all times. When I go into a negro cabin I feel under the same obligations as when I treated President Polk. It is your duty to dignify the profession. The dentist ought to stand next to the minister of the gospel. Never forget to dignify your calling by your deportment. You must know something more than dentistry. You owe something more to society. Read and keep books upon your table. Learn to talk well and intelligently so as to interest your patient, thereby diverting his attention from the operation and diminishing the pain. Be a well-rounded man. Specialization is dangerous unless this is done. Mr. Chancellor, this lady and these gentlemen have passed their examination satisfactorily and are worthy to receive diplomas." Dr. Morgan's kind advice made a deep impression on the students.

Chancellor J. H. Kirkland, in conferring the degrees, said: "I am gratified to see a large audience present. It shows the interest that the great work of Vanderbilt University is arousing. It is with pride that we see year by year an advance in academic and professional work. Vanderbilt feels that she owes a debt to the Southern people, and will endeavor to pay it by offering a full education. A gentleman said to me a few weeks since: 'You have the best law school in America.' We are proud of all our departments. The department of dentistry has achieved a success little less than phenomenal. The reputation of this department is drawing students from all over the country, from the very shadow of other great universities. The term has been extended recently to three sessions of six months each, an enlargement of the course by twenty per cent." In addressing the graduates, Dr. Kirkland said: "You are bound to the university by ties that can never be broken, ties that are as close and tender as those of the family circle. There are two elements of success: professional skill and personal character. Be skillful dentists, and go from success to success, building on the foundation of a strong character. I commend to you the words of your Dean. We wish for you each and every one the fullest success."

The degree of Doctor of Dental Surgery was then conferred on the following: Miss Lillie Selph, Messrs. W. J. King, South Carolina; J. M. Jacobs, Georgia; L. H. Jeffries, Mississippi; W. D. Beckwith, Georgia; J. Z. McElroy, Florida; J J. Middleton, Louisiana; J. A. Naftel, Alabama; J. G. Glass, Louisiana; J. M. Ball, Louisiana; C. S. Bingham, Mississippi; J. L. Reeves, South Carolina; J. A. Gholson, Tennessee; T. L. Whitehead, Virginia; W. J. Rowland, Arkansas; P. O. Patureau, Louisiana; A. D. Cage, Tennessee; F. R. Green, Florida; B. F. Gilmer, Illinois; O. M. Eddy, Illinois; C. C. Winfrey, Kentucky; B. L. Dudley, Mississippi; L. Y. Jones, Alabama; M. A. Carroll, Alabama; W. S. Hanner, Tennessee; S. H. Hatcher, California; W. H. Spann, Louisiana; J. P. Fanchaux, Louisiana; W. J. Sanders, M.D., Tennessee; J. S. Barter, Illinois; G. C. McKennon, Arkansas; J. R. Hibarger, Illinois; P. A. Lee, Louisiana; L. J. Goree, Texas; J. R. Pirtle, Kentucky; C. B. Davis, Georgia; T. G. Campbell, Tennessee; Henry Edward Peach, Alabama.

The valedictory address was delivered by Mr. Henry Edward Peach, of Alabama, his subject being: "Imagination, the Pathfinder of Science."

At the close of the exercises the following medals were awarded: Founder's medal for best examination in all branches was won by Byron S. Dudley, of Mississippi. Morrison Brothers' medal, which is for the second best in the contest for Founder's medal, was won by Alva D. Cage, of Tennessee. Prof. Henry W. Morgan's medal for the best gold fillings was won by George C. McKennon, of Arkansas. Prof. Ambrose Morrison's medal in anatomy and physiology was won by Byron S. Dudley. L. H. Jeffries, of Mississippi, received honorable mention for coming third in the contest for Founder's medal. Dr. J. A. Dale's Junior medal in private class in dental branches was awarded to E. J. Snider, of South Carolina. Dr. J. A. Dale's Freshman medal in private class for dental work was won by E. B. Cade, of Tennessee. Dr. J. M. Bass's medal offered to private class in anatomy and physiology was won by E. D. Rose, of Texas. Dr. J. M. Bass's medal offered to the Freshman Class in the same department of study was won by E. B. Cade, of Tennessee.

Many of the graduates were the recipients of beautiful flowers. The exercises were closed with the benediction by Bishop Hargrove.

COMMENCEMENT EXERCISES DENTAL DEPARTMENT UNIVERSITY OF TENNESSEE.

The commencement exercises of the Dental Departments of the University of Tennessee and the Nashville Medical College were held at the Vendome Theater Thursday night, March 20, in connection with those of the Medical Department, and were witnessed by an audience that crowded the house to its doors. The exercises were of a highly interesting character, the speeches and addresses being most happily delivered, while the music furnished by the Jesse French Orchestral Society was thoroughly up to a high standard of excellence.

Diplomas were awarded by Acting President Thomas W. Jordan, forty-four in the Medical and fifteen in the Dental Department, and his address to the graduating class was a scholarly effort. It was replete with good, wholesome advice, and showed them in the clearest manner the great responsibility that was about to devolve upon them. Knowledge necessarily involved responsibility, and it was with them whether they used their knowledge, and the power attained through it, for a good or a bad purpose. It was within their province to work much good, for the callings they were accepting were of vast importance to the human race. They could also work much woe, but he admonished them to strive for the benefit of their fellows.

Dr. W. P. Jones, President of the Faculty, presided, and the exercises were opened by an eloquent prayer from Rev. James I. Vance, pastor of the First Presbyterian Church. W. A. Titus, of Pennsylvania, valedictorian of the Dental Department, was then introduced, and in a masterly manner addressed his classmates, impressing upon them the necessity of knowledge in all the walks of life, and how its possessors formed the only true aristocracy. His good-bye to college days and college associates was feelingly delivered and couched in expressive language.

The medical valedictory was delivered by Dr. Stell Davis.

Then came President Jordan's address and the awarding of diplomas, after which charges to the two classes were delivered by Dr. Joseph P. Gray, of the Dental, and Dr. Ross Dunn, of the Medical Department. Both were accorded the strictest attention, and the charges were of a nature to impress themselves indelibly on their hearers, who will profit in after years by what their professors told them in their farewell talks.

The awarding of the prizes was next on the programme, and Dr. James Y. Crawford, of the dental Faculty, who was appointed to award them, gave way to his friend, Dr. A. W. Harlan, of Chicago, who was most happy in his remarks.

Those receiving honors were: Robert Russell Faculty Medal, J. T. Phillips, Alabama; Faculty Second Honor (Morrison Bros.), J. E. McGowan, Tennessee; Faculty Third Honor, S. A. Garth, Missouri.

The graduates were: J. W. Blair, Tennessee; S. A. Garth, Missouri; F. M. Gayle, Louisana; E. D. Hancock, Kentucky; Clarence Huston, Missouri; J. B. Love, J. E. McGowan, L. H. New, Tennessee; J. R. Pendleton, Missouri; J. I. Pettus, Arkansas; J. T. Phillips, Alabama; N. A. Royer, Tennessee; H. R. Rouse, Indiana; A. C. Seiser, Missouri; W. A. Titus, Pennsylvania.—*Daily American.*

Associations. . . . .

MISSISSIPPI STATE DENTAL ASSOCIATION.

This Association meets in Jackson, Miss., on the Wednesday following the first Tuesday in April, 1895. Its officers are: W. E. Walker, Pass Christian, President; F. H. Smith, Water Valley, Vice President; T. C. West, Natchez, Secretary; C. C. Crowder, Kosciusko, Treasurer.

We learn from its wide-awake Secretary that "no stone will be left unturned" in the efforts of its officers and members to make this the most profitable meeting ever held in this State. Its Executive Committee, with Dr. J. H. Magruder, of Jackson, Chairman, are arranging the local details, and making preparation for the entertainment of the members, while Dr. R. K. Luckie is doing noble work in the direction of clinics, and seems determined to make this feature an unprecedented success.

Let every dentist in the State make it a point to be present and contribute what he can to the interest and welfare of the meeting.

ALABAMA DENTAL ASSOCIATION.

The twenty-sixth annual meeting of the Alabama Dental Association will be held in the Battle House, Mobile, Ala., on April 9–12, 1895. The official members of the society have been untiring in their efforts to make this meeting, which is to be held in our beautiful "Gulf City," one of the most interesting and instructive occasions we have yet experienced. Some of the most distinguished men in the profession, from a distance, have promised to meet with us, and give us some special clinics and papers.

Article II. in our Constitution reads:

> The design of this Association shall be to promote and foster the advancement of knowledge in dentistry, in all its branches, to build up the professional character of its members, and to encourage intercourse and good will.

It is the personal duty of every member of the society to lend his influence by being present, and aid in carrying out the beneficent and ennobling object for which our society was organized, and all reputable practitioners are most cordially invited to meet with us.

The following are the officers elect: H. D. Boyd, Troy, President; O. C. Farrish, Camden, First Vice President; H. B. Williamson, Evergreen, Second Vice President; S. W. Foster, Decatur, Secretary (removed to Atlanta, Ga.); G. M. Rosseau, Montgomery, Treasurer. R. B. Chapman, Troy, was elected to the Board of Dental Examiners.

We trust that the Secretary's earnest appeal will be heeded by every dentist in the State who loves his profession and seeks its advancement. He will thus promote the best interests of himself and patients.

Special Notice.

The State Board of Dental Examiners will meet at the same place on Monday, April 8, 1895. Every dentist desiring to practice within the State, who has not procured a license, is hereby notified to be on hand and appear before the said board for examination and license. The law is very explicit, and none are exempt. It has come to the notice of the Association that some few so-called dentists are ignoring the law, and are practicing without license. To such, timely warning is given; and if they do not procure license at once, their names will be handed in to the Prosecuting Attorney of the State.

Fraternally yours, S. W. Foster, *Secretary.*

EAST TENNESSEE DENTAL ASSOCIATION.

The next annual meeting of the East Tennessee Dental Association will be held the second Tuesday in June, 1895, at Harriman, Tenn., a flourishing little town in the eastern part of the State, and the home of its worthy Secretary, Dr. George C. Brause. Dr. F. A. Shotwell, of Rogersville, is the President elect; and he, in conjunction with the other officers of the society, is bending every effort to make this one of the best meetings in its history. We bespeak a large attendance, and you are cordially invited. You cannot afford to miss it. *Selah!*

The Chairman of the Executive Committee of the Horace Wells fiftieth anniversary celebration announces that the papers read by Prof. Fillebrown and Garrettson at the meeting, and the speeches delivered at the banquet, have been prepared for publication in the proposed souvenir volume, and will be issued upon the receipt of a sufficient number of subscriptions to cover the expense. Price, $1.50. The undersigned will receive subscriptions, receipt for same, and deliver the book upon completion. J. D. Thomas, *Chairman.*

912 Walnut Street, Philadelphia, Pa.

Obituaries. . . . .

DR. ORVILLE H. MENEES.

Died in Nashville, Sunday morning, February 14, 1895, Orville H. Menees, M.D., in the thirty-fifth year of his age, after a long period of illness.

Dr. Menees was the youngest son of the distinguished Dr. Thomas Menees and of his first wife, Mrs. Elizabeth Hooper Menees. He graduated in medicine from the University of Nashville and Vanderbilt University in 1879, and was chosen Associate Demonstrator of Anatomy, a place made vacant by the death of his brother, Dr. Thomas W. Menees, who lost his life while a volunteer physician during the epidemic of yellow fever at Memphis in 1878. In 1883 he was elected to fill the chair of Anatomy in the same institution. Three years later he was called to fill the chair of Pathology, Histology, and Oral Surgery in the Department of Dentistry, Vanderbilt University.

The duties of these positions he discharged with rare fidelity until failing health forced him to resign. The success of his whole career was not owing to luck or fortune, but must be attributed to the qualities he possessed in a remarkable degree of integrity, judgment, decision of character, punctuality, and unbounded energy and industry. A bright example of well-directed energies has passed away. In his death the institutions he labored so earnestly to build up have lost a pillar of strength, the community in which he lived a wise and honest physician, struggling merit a head to advise and a hand to help, and the distressed and needy a generous friend.

He was a strong character—not always understood—prompt in action, but often slow to speak, thinking much; not forward to volunteer or obtrude his counsel, but giving his opinions when sought or when needed, in few words—clear, sententious, comprehensive. Underneath the blunt outside man were to be found a loving human heart, sensibilities of unfathomed depth—a soul devising the most generous deeds and capable of the sublimest of all virtues—mercy and charity.

Dr. Menees was most happily married in the spring of 1888 to Miss Malinda A. Headly, of Bowling Green, Ky., who died two years ago, leaving an only child, a bright, happy boy of five, who survives his father.

Hundreds of his pupils throughout the United States, whose love and respect, confidence and admiration he won and enjoyed in the highest degree, will mourn his untimely death.

DR. WILLIAM O. KULP.

Died, at Davenport, Ia., January 12, 1895, of blood poisoning, William Overholt Kulp, D.D.S., in his fifty-ninth year.

Dr. Kulp's death from blood poisoning was the result of an accidental injury received in the new dental building of the State University of Iowa, at Iowa City, where he was Professor of Operative Dentistry and Dental Therapeutics. He was born at Wadsworth, O., September 19, 1836. About the twentieth year of his age he began the study of medicine, and three years afterwards severe trouble with his teeth called his attention to dentistry, and he decided to adopt that specialty, and in 1859 he entered upon dental practice at Muscatine, Ia.; subsequently removed to Davenport, where he was long a prominent and skillful practitioner.

In 1867 Dr. Kulp received the degree of D.D.S. from the Missouri Dental College, graduating with the first class of that institution. He took great interest in professional education, and was long a member of the American Dental Association, of the Iowa State Dental Society (of which he was one of the promoters), and was one of the Vice Presidents of the World's Columbian Dental Congress at Chicago in 1893.

Dr. Kulp was married in 1861 to Miss Mary A. Jones, who survives him, with three daughters, two of whom are married, and a son, Dr. J. R. Kulp.

Among the conspicuous figures at the last meeting of the Tennessee Dental Association Dr. Kulp must be remembered. His paper on "Nomenclature of the Surfaces of the Teeth and Notation of Cavities" attracted general attention, while his response to a toast at the banquet is still most pleasantly remembered. His system was published in the April number of the Headlight.

The profession of dentistry in his death has lost an honest and faithful exponent; his family, a strong, loving, honored head.

T·H·E

DENTAL HEADLIGHT.

VOL. 16. NASHVILLE, TENN., JULY, 1895. NO. 3.

Selections.

SULPHURIC ACID AND PEROXIDE OF SODIUM.

BY F. T. VAN WOERT, M.D.S., BROOKLYN, N. Y.

SINCE the introduction of sodium peroxide by Dr. E. C. Kirk, three years ago, I have met with great success in its use, as well as in making the solution. I seem to have been more fortunate than many others, as I am constantly in receipt of communications stating that the writers have failed utterly in their efforts to accomplish results like those claimed for the remedy. The sulphuric acid, which was recommended by Dr. Callahan at Asbury Park last August, I have found so valuable in bringing to light nerve canals that would never be found were it not for its use, that I embrace this opportunity to spread the glad tidings, with the hope that others may be profited by it as I have. It is generally conceded that one of the most difficult and uncertain operations which we are called on to perform is that of opening and sterilizing roots, and in a great many cases it is utterly impossible to accomplish that end, and the result is the loss of many valuable teeth.

Dr. Callahan recommends a 40 to 50 per cent. aqueous solution, as follows:

> Let us suppose that we have an inferior molar tooth in which the pulp has been destroyed. We adjust the rubber dam, open the pulp chamber thoroughly, take an old discarded broach, twist a little cotton on the end, bend the broach to a right angle so it will reach well down in the cavity, place the broach in a suitable handle, and by means of the broach and cotton place directly on and above the dead pulp a drop or two of a 40 to 50 per cent. aqueous solution of sulphuric acid. The solution, by a process of dehydration, will cause the pulp to shrink and toughen so that it can with comparative ease be removed. Now, by means of the broach and cotton, place a drop of the solution over the entrance of each canal. Sometimes it will be necessary to sink a little well or depression at the mouth of the canal, to get the acid to stay where it is wanted.

Take a No. 5 Donaldson nerve canal cleanser, bend it to a suitable angle, cut the shank short with nippers so the broach will fit up close to the handle and be rigid and strong; then with a pumping motion begin to enter the canal slowly and carefully. The acid will precede or follow closely the fine broach and destroy all septic matter it comes in contact with. Proceed till the patient notifies you of a sensation which is similar to that felt when chloropercha goes through the foramen; treat all of the canals in the same manner. I say all, because sometimes you will find what appears to be four distinct canals.

Usually three canals will be found. The posterior root will have one broad canal; the anterior root will nearly always show what seems to be two canals.

By this time the solution will be so charged with disintegrated tooth and pulp substance that it will hide the canals from view. Now, by means of a Dunn syringe, fill the cavity with a saturated solution of bicarbonate of soda; this, when brought in contact with the acid solution, liberates carbonic acid gas in such quantities that the effervescence will carry all the broken up tooth and pulp substance out of the canal, out of the tooth, on the rubber dam, leaving a deposit of bicarbonate of soda lining the whole tooth. This can be removed, if desired, by a little sterilized water, alcohol, or peroxide, either of which will leave the canals white and clean.

If we desire to make the canals larger, place more acid in them and use a larger broach till the canal is as large as wanted; then cleanse again with bicarbonate of soda; dry the canals thoroughly by paper points, alcohol, hot air, etc., and you have the cavity and all the canals thoroughly opened, thoroughly clean, thoroughly aseptic, and you can proceed to treat or fill, as you may choose.

I have been using this preparation as here described, and find the claims made by Dr. Callahan for it precisely as he has stated, to wit:

1. The operation is safe, because the action of the acid is self-limiting on dentine.

2. It is a pronounced germicide.

3. The acid acts on diseased tissue with far greater vigor than on healthy.

4. The destroying of the diseased tissue in this way leaves a fresh aseptic surface.

5. An aseptic wound will heal itself in any part of the body if properly closed.

6. Dr. Callahan claims that the acid softens the dentine a very short distance.

In the use of a bicarbonate of soda solution the acid is neutralized, in doing which carbonic acid gas is generated in sufficient quantities to carry off the *débris* from the root canals.

Now, do not understand either Dr. Callahan or myself as claiming the use of sulphuric acid and soda to make it possible to open all root canals, but credit us with the conviction that by their use many hopeless cases are mastered, and hundreds of teeth saved which would otherwise be lost.

When you are not successful in your attempts to thoroughly cleanse the canals, place in the pulp chamber a saturated solution of sodium peroxide and seal the crown from twenty-four to forty-eight hours; then remove and wash with warm water, after which fill in the usual manner, with the assurance that generally you will have no further trouble. But to obtain these results it is necessary that every detail is followed in the making of the solution. The peroxide must be powdered in a mortar, as it is not fine enough as purchased to add to the water without a chance of spoiling the solution before its completion. Dr. Kirk explains this as follows:

> If the solution be made hurriedly by the addition of much powder to the water at one time, the evolution of heat due to the energy which attends the combination produces a rapid elevation of the temperature of the solution, which causes a decomposition of the peroxide, a loss of its loosely combined extra atom of oxygen, and the resulting solution is little more than a solution of sodium hydrate, or ordinary caustic soda, which is inert as a bleaching power. To obviate the rise of temperature and consequent decomposition of the peroxide, the solution must be made slowly.

To make this solution, take a common tumbler about half full of distilled water, place it in the center of a good-sized pudding dish, and pour all the cold water around it possible without floating the glass. Add the sodium peroxide in very small portions, about what could be taken on the point of a large blade of a pocketknife, dusting it in the water slowly to cause as little agitation as possible, and this amount should not be added oftener than once in a half hour, being careful to have the sodium peroxide finely powdered; this to be continued till the preparation begins to look opaque as powder is added. Let it stand over night, and it is then ready for use. It will then be a prompt bleacher and sterilizer.

The general impression is that sodium peroxide is for bleaching only, while it is the most valuable preparation I have ever found for the treatment of dead teeth, if used as described.

The question has been raised as to whether this solution does not disintegrate tooth substance. I feel safe in saying that it does not, having used it very extensively the last three years without once giving trouble. The preparation can be kept in a glass-stoppered bottle for a long time. Keep it in a cool place.

To preserve the powder, screw the top of the can down tightly, and run between it and the outer rim a little base wax melted so it will barely pour. You can remove the top at any time by simply passing the point of a knife through the wax, close to and around it.—*International.*

DO COAGULATING AGENTS PREVENT THEIR OWN DIFFUSION THROUGH TOOTH STRUCTURE?

Dr. Harlan's Reply to the Discussion of His Paper on the Above Subject.

I believe I have been the most entertained person present. The question of the hour, to which I came to reply, was: "Do coagulating agents prevent their own diffusion through tooth structure?" I thought I had answered that question. I did not enter into the question of the relative values of coagulating agents and non-coagulating agents in the treatment of pulpless teeth, except in the conclusions. I did not give any reasons for the use of non-coagulating agents in my paper. Summing up the discussion: Dr. Jarvie says that doctors disagree. That I am willing to admit. Dr. Howe says that clinical experience is the arbiter of everything. If you are successful when the canal has been filled, diffusion is of no importance. Dr. Heitzmann says: "I doubt very much if a coagulant can enter a canaliculus," and I am quite willing to subscribe to that. Does not that prove my position? There is nothing plainer than that. We have one of the best microscopists in the world right here to sustain me in his own words. Dr. Francis quotes Dr. Barrett, who is not an all around histologist. He says that coagulable material must be melted down. That is the ultimate outcome of his statement. If it is melted down, it prevents the coagulator from passing through. Air is the best coagulant that nature produces. There is no coagulator that is better than air when it comes in contact with blood that is pouring from an artery or a vein. Dr. Perry's remarks are extremely good. He did not discuss the question in my paper, but what he did discuss was correlative to it, and hence not only passes, but has a high mark. Dr. Rhein says that if Dr. Kirk and Dr. Harlan would get together everything would be all right. It is all right anyhow. The only difference is that I have studied this question for more than fifteen years, and Dr. Kirk studied it for a few months before he read his paper. He wanted to prove that coagulating agents did not prevent their own diffusion through dentine and cementum, and he did not prove it—that is, in the experiments you saw made you think they had passed through, but he did not exhibit any specimens with carbolic acid, which is the sheet anchor of the average practitioner throughout the United States and the world. If he does not use carbolic acid, he uses creosote; and when it stays in a tooth twenty-one years, as cited by Dr. Hill, and exhibits its odor at the end of that time, it shows that it had not passed through.

[Dr. Jarvie: "I want to ask Dr. Harlan a question here, for fear I misunderstood him. From your remarks, I understood that the question that Dr. Kirk took up as to the diffusion of the coagulants through a coagulum was an inconsequential question. I thought that was really the question of all questions involved between you."]

It is inconsequential, because the use of coagulating agents was not defined. His experiments with reference to membranes through which coagulating agents passed had no relevancy to to this question whatever. His discussion of the doctrine of osmosis did not cut any figure at all. It was merely incidental, and led up to the main question. The only question was, 'Do coagulating antiseptics prevent their own diffusion?' and he says they do not.

[Dr. Jarvie: "And you believe they do?"]

Yes, and I can prove it.

Dr. Howe says he has been using for a year and a half electrozone, which is a noncoagulator, and he recommends every one to use it. If he does this, it must be because it is better than carbolic acid or chloride of zinc. It must have some merit.

Dr. Wassall introduced a question which I did not mention in my paper, but upon which, if you will permit me a moment, I will elaborate. When the pulp of a tooth is destroyed, intentionally, by the use of orange wood dipped in carbolic acid or anything else, or by the use of arsenious acid, it is the evident intention of the operator to remove that before putrescence takes place. After he does so, and he has no putrescible matter in the tooth, and he treats that tooth with a coagulating antiseptic, there is no objection to that, because there has been no absorption, infiltration, imbibition, penetration, or permeation of any cadaveric alkaloid, microörganism, ptomaines, or any of the spores of pathogenic microörganisms, and if he fills the apex of the root that coagulum will not be broken down. I will repeat that if you wish; in other words, I say, if you destroy the pulp of a tooth in any way intentionally, and do not allow the pulp or the pulp canal to become contaminated from external sources in any way, and you remove the pulp and dry it, and introduce a coagulating agent, and fill the root, there is no objection to that, because no anaërobiotic microörganism can gain entrance to that unless there is destruction of the peridental membrane or cementum, or tearing down of the dentine, and getting it into the pulp canal in that way. I am perfectly familiar with conditions of that kind, although I never studied in Dr. Heitzman's laboratory. (I have great reason to be thankful to him for sustaining me to-night, unconsciously though he did it.) If the pulp of a tooth becomes destroyed by accident or design, and is left to be contaminated, and it is decomposed, and gases of decomposition come out of the opening in the tooth or pass through the apical foramen, and we have a blind abscess or an acute abscess, and afterwards the dentist wishes to treat that, and does treat it, and he applies the rubber dam and washes it out and cleans it, and gets rid of everything that he can in a short time, fifteen or twenty minutes or perhaps an hour, then introduces chloride of zinc, or carbolic acid, or bichloride of mercury, and immediately fills the root; in six or eight years afterwards, or perhaps in three months or less, that patient has trouble, because he has sealed within the open ends of the dentine tubes, exposed toward the root canals, various poisons, the nature of which he does not know because he has not sterilized them. If he does not use a sterilizing agent which will pass through and neutralize and destroy and alter and change these poisons, or prevent the future growth of the spores of the pathogenic microörganisms which may be there, then he would leave that tooth in a bad condition.

This is a general classification, but I have allowed you all to talk so long that I want a minute or two to make myself understood. That is the class of teeth in which I object to the use of coagulating agents. Chloride of zinc is an incinerator, a burner up of albuminous matter. It will destroy silk or cotton. Nobody needs to know more than the primer of chemistry to know that. Carbolic acid is generally used at ninety-five per cent. or thereabouts. The formula of serum-albumin I will not burden you with, because you can easily work it out yourself. There is a chemical change when carbolic acid comes in contact with albumin; there is a chemical change when corrosive sublimate comes in contact with albumin; but there is not a chemical change when chloride of zinc comes in contact with it. It has a great avidity for water, and as soon as that avidity is satisfied it goes no further. It does not pass into the tissues at all.

[Dr. Perry: "In a pulpless tooth, is there any albumen at the opening of the tubuli, which you would liken to the albumen of an egg? Is there anything to be considered at that place and anything to be used at that time beyond something to kill the germs? Is it possible to reason so closely and so finely as to say you are actually coagulating albumen in a tooth which has been dead for years? This is merely a question, and not intended as an argument."]

When the pulp of a tooth dies of its own accord, by accident, or through regulating teeth, or through anything like that, and we do not have an abscess at the apex, either blind or fistulous, the end of the root of that tooth becomes encysted. There is a growth that takes place there, numerous instances of which I suppose our friend Dr. Heitzman has seen. When you open into a tooth of that kind, you find the pulp is shriveled up, although no coagulating agent has ever come in contact with it. You find it without odor. That kind of a tooth does not have any albuminous matter between the cementum and the pulp canal that can be coagulated, because that is more nearly analogous to mummification than anything else, and that mummification cannot be produced with chloride of zinc. If you open into a tooth of that kind, and find the canals moist, then you have albuminous matter that may be coagulated in the dentine of the tooth. In all probability there is more water in the dentine of such a tooth than would be found there normally; but at a little greater depth, the contents of the tubes, or the canaliculi, are not disorganized, and this water is capable of being coagulated, if an agent is applied which will take up the water. If the coagulating agent at that time is applied before any attempt at sterilization or disinfection is undertaken, you may find that still beyond that point of coagulation there is poisonous matter within the dentine that would, if left there, ultimately cause a breaking down of the peridental membrane, and that would account for a great many of the lame teeth that are treated so superficially and so generally, as practiced by the so-called immediate root-filling method. Of course, this question that you have asked me is not really relating to my paper, but I make this explanation at this time simply to indicate what my position is in this matter.

Dr. Hodson says he recommended more than twenty years ago that carbolic acid should not be introduced into pulpless teeth, because it prevented their easy bleaching, in which position he is entirely correct; because the bleaching agent will not pass through the coagulum that is produced in the mouths of the tubes. Dr. Heitzman smiles, but that is where Dr. Heitzman takes a back seat. This is a practical subject; that is why I say that, no disrespect being intended to Dr. Heitzman.

Dr. Hodson wants to know why the essential oils discolor. Some of them do not. Oil of cassia has a coloring matter which will permeate a tooth from one end of it to the other, up to the enamel and through the cementum. It will pass out through the cementum. In more than seven hundred teeth that were planted in plaster of Paris and other substances, we found that oil of cinnamon and oil of cassia could be recovered from the plaster of Paris in from twelve hours to three months, showing that it passed entirely through the tooth and went into the plaster of Paris. When the plaster of Paris was ground up and water added, we would find that the oil could be detected by chemical test in the water. The oil of myrtle and the oil of thyme will not discolor a tooth, and there are a number of others. Old oil of turpentine would eventually discolor a tooth.

Dr. Howell spoke of the exhibition that I gave before the First District Society in 1889. That was the first demonstration of the use of coagulating agents that was ever made before any dental society in the world. I simply demonstrated that certain agents would coagulate albumin, and certain others would not. My opinion was at that time that the noncoagulants were the best.

Dr. Smith asks a question about what are the comparative results with different methods of treatment. I have never taken a single hundred of teeth that had been treated one way, and a single hundred of the other kind, but from 1869 to 1881 I used coagulants in the treatment of pulpless teeth; I have always lived in one city, and have seen the results of my treatment and that of other gentlemen, and I determined that it was not the best practice to use coagulants. I have used noncoagulating agents longer than I have used coagulating agents. I think it is a doubtful question whether the user of coagulating agents succeeds in closing many of the fine canals. He often succeeds in preventing the complete filling of the root canal, and afterwards there will be a permanent lameness of the tooth, or a small abscess if it is a three-rooted tooth, from the one having the most minute opening, and that will account for many obscure neuralgias or uncomfortable feelings on one side of the face that many patients are treated for by their physicians. If they fall into the hands of a dentist who is unfriendly, he will discover that one portion of the root is unfilled, and that is probably the one that was treated with the coagulant. It could not happen with a noncoagulant. It does not solidify. If there is a portion of the pulp of the tooth remaining there, it would produce the abscess just the same in all probability, because that kind of material would be susceptible of disorganization through the agency of microörganisms, the same as anything else.

[Dr. Watkins: "I would like to ask if you have made experiments with electrozone as a coagulant or noncoagulant; and in asking that I would like to state that Mr. Woolf, the discoverer of electrozone, made experiments with it, and he showed to us quite conclusively and satisfactorily that electrozone was not a coagulant; that it destroyed the albumen, cut it all up, so that it had the appearance of water, where carbolic acid, sulphuric acid, and bichloride of mercury coagulated very readily. In the same experiment he exhibited those different materials, and applied them to water which had an aniline matter in it. In each case he applied fully half an ounce, or perhaps an ounce, of these three remedies (carbolic acid, sulphuric acid, and bichloride of mercury), and they would not destroy the aniline matter. He applied one drop of the electrozone, and it destroyed the aniline matter in the course of two or three minutes, so that it had the appearance of being clean water. He stated that there were two kinds of electrozone, one medicinal, which he had prepared for dental use, and the other for general disinfecting purposes."]

The only answer I can give is that the electrozone that I have used is a noncoagulator of albumen. The process of manufacture of electrozone would tend to show that it was not a coagulator. It was not intended to be, and if it gains any reputation in dentistry it must gain it on the fact that it does not coagulate albumen. I thank you sincerely for your patience and courtesy this evening.—*Dental Cosmos.*

RESULTS OF EXPERIMENTAL ROOT CANAL FILLINGS.*

BY D. M. CATTELL, D.D.S., CHICAGO, ILL.

To *write* about "Filling Root Canals" is a comparatively easy thing to do, especially if in the nature of advice; to *fill* root canals is decidedly *not* an easy task.

To fill a miscellaneous lot of canals, and afterwards testing for perfectness or otherwise, is a humiliating procedure, owing to the fact that the "otherwise" than perfect is the rule of discovery.

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*Read before the Illinois State Dental Society, May, 1895.

Gentlemen, if any one or more of you think that when you have filled the canal or canals of a tooth in a given case, that seemed to belong to a class that you deemed "fair to middling," so far as being readily filled is concerned, I beseech you to fill twenty or thirty canals of extracted teeth, after which open and examine for results

Gentlemen, I have been laboring under the comfortable delusion that I was a *fair* root canal filler. The delusive wheel has slipped its spindle and has rolled to your feet, and I feel humbled and chagrined before you at the results of my efforts in filling the canals of a few teeth, which I have opened and now place before you for inspection.

I have chosen six of the more common methods of procedure found in practice, and with each method used I have filled the canals of five teeth which you will find stuck to blocks of wood with sealing wax. The five blocks holding similar canal fillings are tacked together on a leather strap. These teeth are all of recent extraction, with living pulps at the time of their removal from the process, the pulps being removed about two weeks after extraction.

The different methods are designated by numbers, as 1, 2, 3, 4, 5, and 6; and the teeth by letters, as A, B, C, D, and E. These numericals and letters are seen on the sides of the block.

The first method represents the canals moistened with eucalyptus oil; then chloropercha, moderately thin, pumped in the canal with a broach till full; then forcing a gutta-percha point in, displacing much or most of the chloropercha, the points of solid gutta-percha varying in thickness according to size of canal.

The second method used was that of filling the canals with thin oxychloride zinc cement, forcing it in with considerable pressure. In two instances the cement was tinted with red analine.

The third method represents the canals filled with wax (maroon-colored beeswax), pumped or coaxed into the canal by a heated broach, after which a hot copper wire was forced through the wax as far into the canal as was possible to fit it previous to the insertion of the wax, tapering the wire and flattening according to shape of canal.

The fourth method consists of filling the canals with chloropercha, without moistening the walls with any drug, merely pumping with a broach till full, then filling pulp chamber with warmed gutta-percha, and pressing into place with slight force.

The fifth method shows the canal filled with thin oxyphosphate zinc cement, pumped into the canals the usual way.

The sixth method is after the plan that is a favorite with me in daily practice. Copper wires are fitted to the canals, extending them as near to the apical foramen as possible; then these wires are laid aside for a moment, and the canal walls are moistened with as nearly pure oil of eucalyptus obtainable. Then thin chloropercha is pumped till the canal is full; afterwards a solid cone of gutta-percha is plunged into the canal, displacing a portion of the liquid gutta-percha, just as in method first. Now the copper wire is heated and forced into place through the gutta-percha.

The results of the fifth and sixth methods I cannot exhibit. Between my assistant and the janitor in "cleaning house" the other day the trays containing the teeth experimented with after these methods were lost, and time did not permit of going over the ground again.

You have enough before you, gentlemen, to laugh at, and laugh you may without fear of offense, for your efforts in that direction can but add a fraction to what I have already gone through on my own account. The work done looks like that of a schoolboy's, but it is not; many of the canals that I have supposed were being perfectly filled show defects, and those that there was a question regarding their perfectness show well-filled canals. Gentlemen of the Illinois State Dental Society, please examine critically and discuss thoroughly the specimens exhibited.—*Dental Review.*

A PROPER METHOD OF BACKING AND PROTECTING PORCELAIN FACINGS FOR CROWN AND BRIDGE WORK.

BY H. J. GOSLEE, D.D.S., CHICAGO, ILL.

ALTHOUGH numerous papers, both brief and extensive, have been written upon this small, but rather important subject, the writer has conceived the idea of giving his method with a view of interesting at least some of the profession, and especially those who will still persist in constructing crowns and bridges which afford no protection whatever to the porcelain facings, and which in consequence must tend to materially depreciate in merit and value that which probably pertains to the highest in modern dentistry—*i. e.*, "a perfectly constructed and adapted crown or bridge."

In specializing it as my method it is not to presume that I am the originator by any means, for in fact it, or a similar method, is advocated and practiced by many of the most prominent practitioners; but, on the other hand, when we stop to think of the countless number of facings which are constantly breaking off of otherwise neatly constructed pieces of work, we are led to believe that a large proportion of our professional brothers ignore or overlook a most essential point, and are not surprised that so many of the "old school" practitioners should even now refrain from the practice of crown and bridge work, and decry it as unfit and indurable, when as a matter of fact if the proper judgment be used in its adaptation, the proper skill be applied in its construction, and the proper attention be given it by the patient, it certainly ranks among the first from an *artistic* standpoint, for usefulness and durability, beauty and comfort.

But to make it durable the porcelain facing must be protected, and hence, in lieu of that, this summary of a method, the application of which enables me to assert that, of many crowns and bridges made in the last few years, to my knowledge not a facing has yet been broken.

The facing should first be ground to perfectly fit the space, after which the lingual portion of the cutting edge should be ground on a true bevel extending about one-half the distance to the pins, leaving the cutting edge a sharp but smooth angle.

Use preferably 26 gauge pure gold, and after punching holes for pins, burnish to fit tooth snugly, or this can be accomplished easily by placing tooth and backing on a piece of cork, and lightly swaging with a piece of soft pine and light hammer. Trim off surplus gold, remove backing, and insert small pieces of graphite in holes, place on asbestos or charcoal block, and reënforce by flowing over back of gold a small amount of 20 or 22 carat solder to insure retention of its form and shape, replace on facing, cut pins off close and split with a small sharp chisel, which rivets the backing to the facing, and leaves no excess of pins to be subjected to heat of soldering before porcelain is sufficiently hot, thereby relieving the probable cause of the greater proportion of the checked facings in solderings; then with a fine file dress the backing down on the approximal surfaces, filing, of course, toward the porcelain, that the gold may be held in place, and then in filing the backing on the cutting edge the file should be passed on a parallel with the labial surface, which will leave the thickness of gold for a tipping, care, of course, being exercised to avoid leaving an overhanging edge, which will result in the fracture of the porcelain upon the contraction of the gold after soldering. If the thickness of the tipping of gold should be objectionable, it can then be dressed down until scarcely perceptible and yet afford ample protection to the porcelain, for, as can readily be seen, it will be impossible for the occluding teeth to come in contact with the facing in masticating.

The same procedure applies as well to the bicuspid and molar "dummies" for bridge work, only that a thinner gauge gold may be used (28 or 29 gauge), as it is afterwards filled in with gold scraps and solder, and after facing is ground and backed and a suitable cusp has been swaged, the buccal portions of the cusp should be cut away to the occlusal angle and jointed as well as possible to the facing, then held in apposition with hard wax, invested and soldered; the joint between cusp and backing will fill in nicely with solder, and after finishing will result in a beautiful piece of work, accomplished with the minimum amount of metal showing, with the preservation of the angles of the tooth, and with the perfect protection of the porcelain.—*Dental Review.*

DISEASES OF THE MAXILLARY SINUS.*

BY HARRISON ALLEN, M.D., PHILADELPHIA, PA.

There is probably no subject in clinical medicine which has undergone greater change in the last few years than that of diseases of the maxillary sinus. Prior to the time when we obtained aid by reflected light in inspecting the nasal chambers, and to the use of the electric lamp in transillumination, the diseases of the sinus were not detected in their early stages.

The older writers said, for example, that one of the signs upon which physicians must depend for diagnosing pus in the sinus is a thinning of the anterior wall. This was said to be pushed forward and to crackle under pressure of the finger at the canine fossa. Another sign relied upon was the fullness over the sinus and general swelling from the eye downward; some, indeed, spoke of the elevation of the floor of the orbit; in a word, all the tests depended upon the supposition that the chamber itself was over distended. Thus Salter ("Holme's System of Surgery," 1864, Vol. IV. p. 27) gives the local symptoms as follows: "The expansion of the whole jaw; the fossa beneath it full and prominent; the molar teeth on the affected side appear to elongate; the concavity of the hard palate becomes flat or even convex; the nostril on the corresponding side is more or less closed; in severe or protracted cases the floor of the orbit becomes so pushed up as to protrude the eye."

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*Read before the Academy of Stomatology March 12, 1895.

Erichsen ("Science and Art of Surgery," American Edition, p. 709) describes the cheek in "dropsy of the antrum" as being round and prominent and indolent; a semielastic tumor forming in it and protruding out of it, and giving rise to the egg shell or parchment crackling on pressure.

In Gross's "System of Surgery" the description, both of the inflammation and suppuration of the maxillary sinus, is denotive of graver conditions than I am aware is ordinarily met with; at least such states as those described by Gross are occasionally seen, but that they do not express the phase of diseased action met with in rhinological practice, I am convinced.

In common with all other physicians who are interested in diseases of the nose and adjacent parts, I have seen many cases of maxillary disease, and I may say that in a single instance only were the signs enumerated above present. The older writers evidently had in view a distinct condition.

Speaking entirely from the results of my own experience, I would say that diseases of the maxillary sinus are of five kinds, mentioned herewith, in the order of their frequency: 1. A secondary pus formation dependent upon irritation at the root of a tooth. 2. A purulent inflammation seen in rheumatic subjects, and not to be separated from exhibitions of rheumatism seen elsewhere in the economy. 3. Extension of empyema of the frontal sinus into the maxillary sinus. 4. Polypoid degeneration of the mucous lining of the sinus. 5. Presence of sero mucous, formed under catarrhal excitement.

1. Pus in the maxillary sinus, when arising from irritation at the root of a tooth, is the condition which associates this disease with dental practice in a conspicuous manner. It is important to remember that a very slight amount of pus will sooner or later tend to find its way into the nose, so that the purulent discharge in the nostril should immediately lead the observer to examine the teeth; and if any of the molar or bicuspid series be found defective, they should receive prompt attention. Extraction of the offending teeth will cure the purulent discharge in a very short time, provided that no degenerate processes are set up in the mucous membrane or bone. It will sometimes happen that after teeth have been extracted and the pus collection entirely removed, relapses will occur. In such cases we have one of three conditions to study: irritation

from imperfect absorption of the bone about the bottom of the old socket; imperfect healing of the wound created by extraction; or the presence of inspissated masses (the products of inflammation) in the chamber itself.

2. The results of dental irritation may be present in persons of a rheumatic diathesis. But inflammation of any kind, whether excited by disease about the root of a tooth or not, may extend rapidly into the sinus. Such cases are more apt to occur in middle life than at any other period, and I have reason to believe that they are more common in those with history of alcoholic excess than in the temperate. Rheumatic inflammation may occur on both sides of the face.

3. Disease of the frontal sinus, if neglected, is apt to extend into the maxillary sinus. In more than one instance, after treatment of the frontal sinus, the discharge in the nose continued, and I performed a second operation upon the maxillary sinus, with the result of demonstrating that empyema had existed in both the chambers. I have seen several cases in consultation where, after treatment of the frontal sinus empyema, the same condition was detected in the maxillary sinus.

4. The occurrence of a polypoid mass on the wall of the maxillary sinus may occur in the latter stage of any disease affecting this chamber. Whether these growths are at any time the exciting causes of collections of pus is uncertain. This condition is perhaps the most inveterate of any to which the maxillary sinus is subject. Fortunately it is rare.

5. In the last place, we have occasionally present effusion occurring in the maxillary sinus. I have not seen this condition described, and it was unknown to me prior to my custom of using transillumination as an aid to diagnosis of disease in this portion of the body.

No case has come under my notice in which I could prove that inflammation of the maxillary sinus had extended from the nasal chamber. On anatomical grounds such an extension is readily explicable. I acknowledge that the difference between the two cases here detailed and those of inflammation of high grade is only one of degree.

I remember in this connection the case of a lady of middle age, who reported to me on account of deafness due to spastic inflammation of the middle ears. There was a large posterior hypertrophy of the inferior turbinated bone on the right side, and ulceration on both sides of the triangular cartilage of the septum. The disease continuing obstinate led me to make a careful inspection of the facial structure by transillumination. To my surprise, the entire right side of the face was much more opaque than the left. Pressure over the maxillary sinus above the gum on the right side yielded a dull pain, which had not been complained of. The patient was of full habit, and lithamic. The opacity gradually disappeared by attention to general health and the use of alteratives.

In a second case, also a nasal disease (chronic nasal catarrh), in a lady in middle life, suspecting disease of the sinus, I made a careful examination by transillumination without result; sometime afterwards, not being quite satisfied of the validity of the previous test, I repeated it and found that the light did not pass through on the right side. In both these cases I concluded that the sinus was occupied by a fluid which prevented transillumination of light, but which did not distend the chamber and did not escape into the nose.

It is probable that the instances in which this effusion occurs are more numerous than we have supposed, owing to the fact that prominent symptoms are not created by the presence of the fluid. It would have been a mistake, in my judgment, to have opened the sinus in either of these cases.

Occasionally diseases of obscure character are located in the region of the maxillary sinus, which do not readily admit of classification. A case of this character may be here outlined: A gentleman reported suffering from pain in the right side of the face, in which I was unable to determine the cause. After a futile study, the patient was etherized and the parts thoroughly explored. The sinus was opened in front at a point posterior to the canine fossa. Everything was found to be in a perfectly normal condition; nevertheless, the patient rapidly recovered. Opening the sinus thus cured a pain which was centered in the region of the face.

Let me narrate a second case. Localized neuralgia of the nature of tic douloureux was confined to the tissues upon the right side of the face, in a married woman, aged thirty. The parts were swollen, and the entire region of the cheek, including the malar bone, was unduly prominent. The pains were intermittent, attended with heat, flushing and convulsive movements of the muscles of expression. The skin was at all times branny, shining with excess of sebaceous secretion, and of a redder color than that over the rest of the face. There was no discharge either into the nose or throat; the molar teeth had been futilely extracted; the first bicuspid and the incisor were dead. The test of transillumination was negative. I etherized the patient and carefully explored the parts. The sinus was opened, and found to be apparently normal; the cheek tissues were dissected up as far as the lower part of the orbit, and the infraorbital nerve dissected from the point of escape from the infraorbital canal, and a portion measuring one centimeter in length excised. The sinus was opened on a line with the canine fossa, and found to be empty. It was packed with iodoform gauze, and, greatly to my surprise, on the following day on removing these strips they were found to be saturated with pus. It was not possible that the pus could become formed from a perfectly normal sinus in so short a time, and I inferred that there had been pus somewhere in the sinus before operation, probably in the posterior part, which is occasionally provided with a septum-like spur, and thus in part separated from the anterior part. The recess may have contained pus. The patient made a good recovery. There has been no return of the neuralgia, but the empyema has been a little tardy in disappearing. At this date, after a lapse of four months, the patient is entirely free from neuralgia, and subject only to a very slight occasional purulent discharge from the sinus into the nose.

Syphilitic disease, of course, may be located in the maxillary sinus as well as in any other part of the economy. I simply mention the fact of the possibility of occurrence, since cases are occasionally detected. They require no special consideration.

In very old people who have lost their teeth, a disposition exists for the maxillary sinus to expand as the alveolar processes are absorbed. The floor of the maxillary sinus is brought in contact with the gums. Instances of this kind are known in which the maxillary sinuses are the seat of purulent inflammation, and so thin is the wall of bone intervening between the mouth and the sinus that they were opened with a gum lancet.

All affections of the maxillary sinus appear to be much less frequent in the well to do than in the poor class of patients. Judging from my own experience, about eight per cent. of the crania obtained from dissecting rooms exhibit evidences of inflammation of these parts. Physicians in charge of large dispensaries report that one or two cases of antral disease are generally found at any time on the list of applicants, yet dentists in large practice inform us that they almost never see diseases of the maxillary sinus. One gentleman of extended experience tells me that in his entire career of forty years he has seen but a single case. Certainly in rhinological practice they may be said to be not infrequent, and the affection should be thoroughly studied in all its phases by any one preparing himself to undertake this line of medical work.

"STIRPICULTURE" IN JAPAN.

After thorough discussion of the whole subject in Congress, in public meetings, and through the press, in 1855 the Acts to promote the "Physical and Moral Welfare of the People of Japan" were made law, and their execution was committed to officials belonging to the medical profession. The fundamental principle is: that political power and the procreation of the race shall be restricted to those without physical and mental blemish. Following are the chief provisions:

1. The age of legal majority is fixed at twenty years for both sexes, and all must be registered before admission to the privileges of citizenship and marriage.

2. The first step to registration is a physical examination, conducted by two male practitioners of medicine for a male candidate, or two female practitioners for a female candidate, who is stripped and subjected to as rigid inspection of the whole body as is imposed on military recruits. Likewise strict inquiry is made into the antecedents and habits of the party, as in examination for life insurance. No one actually affected with a constitutional disease of permanent nature; no one once convicted of felony or thrice of misdemeanor; no one addicted to the immoderate use of intoxicants or narcotics; no one liable to inherit such neurotic defects as drunkenness, insanity, or proclivity to crime can be registered. Thus, if both parents have been insane, addicted to alcohol or narcotics, or convicted of felony, their children are disqualified. If the father alone has labored under continued insanity, been habitually addicted to alcohol or narcotics, or more than once convicted of felony, then the sons are disqualified; or, *vice versa*, if the mother, then the daughters.

3. A minor who has consent of parents to marry may be admitted to examination before majority.

4. The following are debarred from suffrage and surgically incapacitated for procreation, whether before or after registration: (*a*) Those convicted of felony; (*b*) those insane for three consecutive years, or thrice consigned to a lunatic asylum; (*c*) those proved to have been addicted for three or more years to immoderate use of

alcohol or narcotics; (*d*) children born out of wedlock, within one year of birth.

5. Fraudulent registration is felony for the principal, and misdemeanor for the abettor; and three such misdemeanors are equivalent to felony.

6. A special property tax is levied on all unmarried men over twenty-five, and women over twenty-one years of age, for the relief of families with children, according to their necessities as ascertained by proper magistrates.

7. Insanity is no longer pleaded in extenuation of crime; and failure on the part of nearest of kin to bring presumed or suspected lunatics before the proper commission is made a misdemeanor.

These acts have been in force forty years, and their fruits can now be determined with certainty. It is apparent:

1. That in bodily vigor and health the Japanese are superior to all other people. At the same time they have become the foremost power of Eastern Asia, they rank among leaders in the sciences and useful arts for the whole world, and in wealth *per capita* they stand at the head.

2. That insanity and excess in the use of alcohol and narcotics have diminished many fold, and are less common than any other part of the world.

3. The same can be said of all kinds of crime, in consequence of which criminal lawyers lament their lost occupation.

The explanation of these salutary changes are:

1. Heredity, as a factor in disease and crime is practically eliminated.

2. The disabilities imposed by these acts are more deterrent from crime and excess than the penalties before announced.

Proof is abundant that loss of procreative function is more dreaded by the criminally disposed than all other consequences of their acts, and therefore its operation is twofold.

At this day no one in Japan questions the proposition that the general welfare is paramount over individual rights, and that society as a whole shall protect itself by systematic inhibition of defective units. Likewise no one doubts that this astonishing elevation of a people during a single generation is due the same severe system of pruning which has enabled horticulturists to produce rapid and prodigious improvements in fruits. As in horticulture, numbers have been sacrificed to quality, and the population of these islands declined largely during the first twenty years under the new policy.

It is still less than it was forty years ago, but is already increasing. The records of vital statistics show that length of life is considerably extended, and I find that in Japan premiums in life insurance are below those found elsewhere.

The question naturally arises whether such a system of control is applicable to our United States of America, and I may be expected to offer an opinion. We must first consider that the conditions here forty years ago were different from any which have existed at home, though rather in degree than in kind. It is true that judicial miscarriages in the States of the Union have been a foul blot on popular government, and the abuse of alcohol and narcotics have been a grave social and political problem; but they have never produced such degradation of health and character as prevailed here in the first third of the present century. In fact, not only loss of civilization, but extinction of the race was threatened, and the best men and women of the commonwealth recognized the necessity of sacrificing what has been considered the most precious part of liberty, in order to save attributes more essential to humanity. No such emergency has arisen at home, and no such radical method is demanded. At the same time it is reasonable that similar methods, if thoroughly carried out, would set a faster pace in civilization than any hitherto known in the history of the Aryan race.—*S. S. Herrick, in Pacific Medical Journal.*

MINERAL CEMENTS.

BY PROF. S. J. WILLEY.

For a long while there have been on the market mineral cements, phosphate of zinc, insoluble cements, granite cements, diamond cements, and a great number whose titles would seem to indicate that the substance to be put into the form of a plastic filling is not excelled even by the diamond itself. All of these cements, subjected to the ordinary chemical analysis, disclose the fact that they are made of similar substances, and their real differences consist largely in the method of preparing them.

It is not uncommon for dentists to be informed that oxide of zinc, put into a crucible properly luted, and the whole placed in an ordinary fire and allowed to remain for an hour or two, constitutes a cement of very excellent quality; and that they may purchase at any drug shop dilute phosphoric acid, and the two will make a cement to fill cavities with safety both to the patient and their own reputation. Experiments with these things sometimes meet with tolerable success; but there cannot be by this kitchen method that uniformity of production which emanates from a scientific conception of the uses to which plastic fillings are put. To have uniform results, materials must be prepared scientifically.

The glacial phosphoric acid that is useful for the ordinary purpose of the druggist will not necessarily be useful for the dentist, because the needs of the two are different. What methods are to be employed in the dehydration of aqueous phosphoric acid? The specific gravity and heat intensity belong solely to the functions of him who knows what these things should be, to make a proper chemical combination with his powder. That one may know the degrees of his Baumé and of his Fahrenheit, and also the fact that aqueous vapor should be eliminated from the phosphoric acid, when chemical combination has been properly brought about by the insertion of other substances into it, are important; but it is still more important, both scientifically and commercially, to know how this material can be uniformly produced and its integrity maintained. The methods necessary to produce this liquid in a form which will give the best results do not come within the profitable purview of him who uses this fluid. They are too costly.

A test employed by some manufacturers to determine when the fluid is properly prepared is to affirm that the fluid should be of the consistency of glycerin, as though all glycerin is of the same consistency, regardless of the influence of quality or heat and cold! Just as we can never determine whether a substance is alkaline or acid except by tests by the proper agents, so you cannot tell by sight alone when the fluid is in proper condition; scientific apparatus alone must determine it. In this, as in some other matters, sight fails.

The same criticisms which hold in relation to liquids for cements will hold largely in reference to the powder. Should it be an oxide of zinc? If so, why should not the raw oxide of zinc answer as well? Should it be calcined? Why? Does the principle of dehydration enter here the same as in the fluid; and, if so, what intensity of heat must be employed to produce the dehydration of the powder? Is it less an oxide after calcining than it was before? Does it possess the same hydroscopic qualities before as after? These should concern the manufacturer; and he must, by actual test in manipulation and integrity, both in and out of the mouth, determine what must control him in the preparation of the powder for cements. While the powder and the fluid have been prepared according to known and scientific rules, there is nothing left then, if these two are chemical substances, but to bring them together under proper conditions, and then we shall have a new compound instead of phosphoric acid or the zinc; we may likely have a zinc phosphate that enters the tooth cavity and performs the functions of which the dentist very well knows its utility. When these two substances are brought together, chemical action is the result, heat is evolved, and a new substance formed; therefore the more intimate the fluid and the powder become, the slower will be the setting of the cement, the finer the grain, and the more solid the filling. Every molecule of the powder should come in contact with every molecule of the fluid. The rules given for mixing are the result of this principle.

Cements cannot be mixed like a hodman mixes his mortar, because the chemical combinations will not form in the same way, nor will the proper results be obtained from a physical point of view. Therefore we have deemed it wise to give the following suggestions to guide the dentist in mixing mineral cements whose utility and value are becoming more and more apparent as they are used more and more by the profession. Only a very little practice is required to become an adept in mixing the material, so that the mass will be exactly of that plastic character best suited to the cavity to be filled. A failure in mixing will always result by using an excess of powder. Cleanliness is very important. The glass slab to be used should be thoroughly cleaned, and the spatula smooth and tolerably stiff.

While it is very difficult to formulate any exact set of rules which will meet the requirements of every dentist, because it is difficult to find any two who are governed by the same rules; yet, after a long series of experiments and consultations with the very best operators in the profession, we find that the following rule will be an excellent guide to those who have not yet adopted the methods here suggested: Pour on a small glass plate enough fluid for your purpose. Put beside it enough cement powder for the filling. Draw the powder gradually into the fluid, and with a stiff spatula quickly rub the mixture into the consistency of cream, bearing hard all the while on the spatula, gradually manipulating it without any more powder. When the mass has become sufficiently plastic, apply it to the tooth cavity in the usual manner. It is necessary to emphasize the fact that no more powder must be added to the mass when it has been worked to the consistency of cream, and that continued manipulations, without the addition of any more powder, will gradually bring it to that degree of plasticity which is essential to a hard, unshrinkable, and bony mass.—*Adapted from Items of Interest.*

Extracts. . . . .

THE LEUCOCYTE'S LAMENT.

THE leucocyte was in a gland of inflammation red,
He grasped a comrade by the hand, and with a sob he said:
"'Mid solitary follicles I wend my weary way,
Deep down in crypts of Lieberkuhn, far, far from light of day.
Alas! this aching nucleus can ne'er be free from pain;
While tissues hide my beauteous bride I ne'er shall see again.
A rosy red corpuscle, she, the pride of all the spleen,
Her like in the dark gland I fear will nevermore be seen.
A fierce bacillus captured her, and reft her from my side;
Carbolic oil his plans did foil, but, ah! it slew my bride.
With pseudopodia feebly bent and bowed down nucleus, I
Must turn to pus." And, speaking thus, he wandered forth to die.

O, lightly they'll talk of that leucocyte true,
As they label and mount and degrade him;
But little he'll reck when with aniline blue
They've stained and in Canada laid him.

—*Bristol Medico-Chirurgical Journal.*

AN ALVEOLAR ABSCESS.

Is there such a thing as an alveolar abscess? There may be, but in a practice of more than thirty years we have not seen one. We have seen ulcers of the alveolus, and on the root of a tooth, but never an abscess of the alveolus nor an abscess on any part of the tooth excepting on the apex of the root.

An abscess on the apex of the root may produce by the pressure of its sack an absorption of the contiguous alveolus, and it will make for itself a passage through it and the adjoining tissue for the drainage of its accumulating matter; but this does not prove that the abscess is on these, or even attached to them, or that it seriously affects them. In fact, it is so separated from them by its strong, tough sack, and by its fleshy tube which drains its accumulating pus, that generally all communication with outward tissues is prevented.

Do not doubt our assertion because you have so often seen matter issuing from the gum all around the tooth, especially on the slightest pressure, eating in and dissolving the alveolus, and of even the side of the tooth itself, loosening it so that it is almost ready to drop out. All this is not from an abscess, but from an ulcer. This shows the necessity of ever keeping in the mind the distinction between an abscess and an ulcer. The latter has no sack to keep its matter within bounds; the former has. The matter generating from an ulcer is extremely acrimonious, whereas that from an abscess is comparatively innocent. The poisonous matter on the side of a tooth, or in the alveolus, spreads freely in all directions, and disintegrates all it touches. As it oozes from around the gum of a tooth, touch it with the litmus paper, and see how intensely acid it is; so corroding it is that it dissolves even the enamel. Not so with the pus from an abscess. The latter may be present for years with little harm. But dislodge its sack from the apex of the root, and you destroy it forever. It never has attachment anywhere else, and cannot live unless it is allowed to remain as the connecting link between the tooth and the former nerve. This is the reason it should be called an abscess of a tooth, and not an alveolar abscess. Ulceration may attack a root while it is still alive; an abscess, never.—*Editorial in Items.*

AMPUTATION OF TOOTH ROOTS.

In the last Mississippi Association Dr. W. E. Walker described what he claimed to be a unique case from the fact that in a mouth, of which all the teeth were perfectly sound externally, no caries having ever appeared in any of the teeth, one root of each of the four first molars had abscessed and necrosed, causing death of the pulp, the abscesses having been chronic for some twenty years when the case came under Dr. Walker's care in the spring of 1892. At that time an angry-looking tumor had developed on the gum, exciting the apprehension of the patient, who then applied for relief. Examination showing the posterior root of the lower first molar, denuded of pericementum, and therefore incurably abscessed, it was decided to amputate the diseased root. The tooth was opened through the perfect crown, the putrescent pulp removed from the anterior canals and pulp chamber. The posterior root was then amputated on a line above the gum margin to the point of bifurcation, the other canals properly filled, the pulp chamber being filled with gutta-percha, which was pressed through the opening at the point of amputation, and smoothed off on the under side with a warm instrument. The coronal opening was filled as usual. Nothing was done to the other first molars; the tumor was left to take care of itself, the source of irritation having been removed. Three years later—this present spring—the patient requested that the same operation be performed on the other three first molars, the first proving a perfect success. The tumor had disappeared, the tissues were healthy, the sockets had entirely filled up, and the gum fitted in under and around the projecting posterior portion of the crown, so that, except by close examination with an instrument, no one would suspect that the tooth had only the anterior root. The posterior root of the right lower first molar and the lingual root of both of the upper first molars being in a similarly abscessed and necrosed foul condition, coated with serumnal calculus, were, last March, operated on in the same manner, with promise of retaining for the patient three more good teeth.—*Items.*

SALOPHEN FOR THE RELIEF OF TOOTHACHE.

In some cases of odontalgia especially we have observed relief under the influence of small doses.

Case 8. Phar. DeJ., aged thirty-seven, suffers from toothache, which occurs in frequent and violent attacks. Two doses of 0.5 gm. salophen afford prompt relief.

Case 9. Female, aged thirty-two, odontalgia. Disappearance of pains after three doses of 0.75 gm.

Case 10. Seraf. Vanderm, aged forty-five, toothache. Pains alleviated by two doses of 1 gm. each.

We regard ourselves, therefore, warranted in the conclusion that salophen possesses an undoubted antineuralgic and analgesic effect. This action frequently is manifested only from doses of 3 gm. and more pro die. Occasionally, though quite rarely, smaller doses suffice.

We would remark, in this connection, that these results were obtained from the administration of comparatively large doses (at least 3 gm. daily). Our first experiments taught us that we must often resort to such doses in order to attain a really good effect. This explains the failures that have been experienced by some observers.

It is not necessary, however, to always employ such large doses; frequently doses of 0.75 and even 0.5 gm., repeated once or twice, are sufficient.

The use of this remedy is unattended by disagreeable after effects or disturbances of the stomach or intestinal canal. It is readily taken on account of its freedom from taste or odor. We are convinced that given in doses sufficient to produce a cure, or at least improvement, salophen is perfectly innocuous, and we would recommend it in neuralgia and cephalalgia, as well as in other painful nervous affections.—*Times and Register.*

MANAGEMENT OF SMALL AND TORTUOUS CANALS.

All canals do not require to be drilled out and filled solidly to the apex to remain comfortable and satisfactory. On the other hand, no man is doing his full duty who fails to make an honest effort to fill all canals that can be filled with a reasonable degree of skill and application, or who neglects to sterilize as perfectly as may be every canal that he cannot fill.

When a hidden opening can be found, the orifice should be sufficiently reamed out to give an indication as to the size and direction of the canal. A small stiff broach should then be used to explore the canal as far as possible, and when the broach refuses to go any farther after conscientious effort, it may be taken for granted that the caliber of the canal is so small that little or no trouble will supervene as the result of failure to clean beyond the point reached by the broach. An antiseptic should be worked well up in the canal by flooding the chamber and manipulating with the broach. Tortuous canals are followed to the best advantage by taking a small, freshly filed, smooth broach of piano wire, and curving it from time to time to follow the curve in the canal. There is little danger of breaking a broach of this kind in the canal, however much of a curvature it may have. In the attempt to fill such canals as these, it is folly to use any material which is not semi-fluid on its entrance; something which cannot be pumped in position and worked into inequalities and interstices with the broach. —*Dr. C. N. Johnson, in Cosmos.*

ALVEOLAR ABSCESS.

Dr. N. Pearson says: "We do sometimes meet a case where there is fistula without an apical opening, or if there is one we are not able to find it, and no remedy can be forced through without drilling. In such cases we will find a broken Morey drill made sharp by stoning two sides to a cutting edge, or by using the regular Morey cutter, very effective, using care in choice of roots to be opened, or such as are accessible to straight drills, and open them only at the apex. In dealing with roots of this kind I have been able, especially in inferior teeth, to force a passage by warming gutta-percha and pushing it into the chamber and canals with the tip of the forefinger or thumb, or an instrument quite as large as the cavity, thus making a strong piston force. In still other cases where we have a curved root, and in consequence a liability to make a side issue or other good reasons for not piercing the apex, by using a syringe with hydrogen peroxide, and getting as near the seat of the abscess as possible through the external opening, and a very mild pressure on the piston, we may be able to persuade the contents of the sack to imbibe sufficient of the antiseptic to effect a cure. There is still another way of getting at an abscess, which for some reason we are not inclined to apply other means of remedying, and this is through the process, by using cocaine or other local or general anæsthetic, or by proceeding without these aids. The operation is not very painful, and is soon done with. In doing this a sharp fissure drill in the engine may be rapidly run over the end of the root, completely severing the connection between root and sack, followed by any good antiseptic and soothing remedy thought best. Cut, and in a few days all trace of abscess disappears."—*Dominion Journal.*

OXYPHOSPHATE.

WHAT of it?

Is it good as a permanent filling alongside of gold or amalgam? Is it a failure also?

What does the profession say of it?

Everywhere you hear the cry: "It gives way at the cervix in all cases and soon wears away, and is not fit for contour or permanent work." It is not to be relied on.

If this be true, then it is useless to place it in carious teeth.

That it will preserve tooth structure from further decay admits of no doubt.

That it will preserve the contour of the tooth is generally certain.

That it will not destroy the pulp in near contact with it is equally sure.

That it will preserve tooth structure with nearly all the decay left in the cavity and without much or really any shaping is incontestable. It is beyond value when you know how to mix it, how to manipulate it, how to shape it; how to treat it before you remove the dam or allow it to get wet; how to treat the phosphoric acid to keep it from crystallizing, insuring you thereby a better result in every way; and when proper precautions are taken with these fillings, how inestimable are the results, and beyond cavil and doubt! —*Prof. J. Foster Flagg.*

EXCESS IN CYCLING.

Dr. W. B. Richardson, one of the most eminent living authorities on health and bodily exertion, has uttered these warning words against excess in cycling, of which, in moderation, he is an ardent supporter: "Long and severe competitions of cycling, in which the exercise of full speed is kept up for many days, may excite the admiration of lookers-on, who sympathize with the sportsman; but there is a certain end to it in derangement and disease of the circulation, which is inevitable. The heart gets unduly active, the arteries become unduly distended, the elastic tissue of the arteries, and of the body generally, loses its spring, and then the body becomes prematurely old and broken down. Lately, too, the cyclist has got into the very bad habit of bending forward at his work, so that the spinal column takes an unnatural shape, which is often a prominent deformity, and which gives to other exercises and games an ungainly action. Sometimes, again, locomotion of the body in walking is made ungainly by cycling, and is impaired considerably for pedestrian feats. While, therefore, I put cycling forward as a good exercise, one in which I myself indulge, and always with pleasure, because it enables me to travel twice the distance, and with greater facility, than I could on foot, and because it affords much gratification of movement, I warn against the peril of overwork from it. When the cyclist goes so far or so quickly that the effort he has made produces an undue sense of fatigue, when his limbs are restless and twitching after he lies down in bed, when he wakes from a troubled sleep feeling that he is more tired than he was when he went to bed; then he gets the best indications he can get that he has been doing too much, and he may take my word for it that he cannot repeat this many times without doing himself injury."

REPEATED CÆSAREAN SECTION.

In the *New York Polyclinic*, 1894, Vol. IV., No. 2, Coe reports the case of a dwarf of deficient mental development with a justo-minor pelvis highly contracted, on whom he performed Cæsarean section in January, 1891, a living child being delivered. During her convalescence the patient was unruly, and burst open the wound, the intestines protruding. The wound was again closed, and recovery followed. In autumn, 1893, she was again operated on, and the adhesions were separated. In April, 1894, she was again pregnant at six months. She was kept under care in hospital and delivered by Cæsarean section at the expiration of nine months' gestation. The abdominal and uterine incisions were made at the side of the former incision, and the adhesions were avoided. The omentum was resected where adherent. The tubes were ligated to prevent further impregnation. Although the wound became infected from bad catgut, the patient recovered. Her child survived.

Guéniot, in the *Annales de Gynécologie*, 1894, Vol. XLII., page 98, reports two cases of repeated Cæsarean section performed on rachitic women, one of them a dwarf. In one case the points where uterine sutures had been inserted seventeen months before were plainly visible. No difficulty from adhesion or lack of primary union was experienced in these repeated operations. In contrast with repeated and difficult deliveries with forceps or craniotomy, these cases show the better results for mother and child following surgical delivery.

SPERMATOZOA IN THE BLOOD.

We recall the incident related to us by Dr. Henry Gibbons, now deceased. One of his patients, deluded by the advertisements of a notorious quack, sought the advice of the latter for an imaginary sickness. The quack asseverated that the patient suffered from spermatozoa in the blood, and to emphasize the gravity of the condition, drew on a piece of paper a spermatozoön in a blood vessel. "If the spermatozoön," continued the quack, "runs parallel with the blood vessel, all will be well; but let it turn, so that the vessel becomes obstructed, and immediate death will surely follow. If I were to be informed by some one that a man had suddenly died on the street, I would not be surprised if I were told that it was you." "How much will you charge for curing me?" said the now affrighted victim. The quack replied by telling him that there were two methods of cure: a rapid one, which would cost $500; and a slow one, which would cost $250. Naturally the victim selected the rapid cure, and signed a check for $500. The victim, after leaving the office of the quack, met by accident his regular physician. He recounted the conversation of the quack. The physician quickly demonstrated the absurdity of the statement that spermatozoa entered the blood. The unfortunate dupe, after leaving the physician, returned to the office of the quack, and at the point of a pistol demanded the immediate return of the check, which under the circumstances met with no refusal.

IS VITALITY ELECTRICAL?

Sir Isaac Newton's "Principia," the masterpiece of that great philosopher's career, closed with these words: "And now we might add something concerning a most subtle spirit which pervades and lies hid in all gross bodies; by the force and action of which spirit the particles of bodies mutually attract one another at near distances and cohere if contiguous; and electric bodies operate to greater distances, repelling as well as attracting the neighboring corpuscles, and light is emitted, reflected, inflected, and heats bodies; and all sensation is excited, and the members of animal bodies move at the command of the will—namely, by the vibrations of this spirit mutually propagated along the solid filaments of the nerves from the outward organs of sense to the brain, and from the brain to the muscles. But these things cannot be explained in a few words, nor are we furnished with that sufficiency of experiments which is required to an accurate determination and demonstration of the laws by which this electric and elastic spirit operates."

As electricity has become known to-day, it seems to fulfill in the most remarkable manner the wonderful prophetic conception of Newton. If the incontestable conclusion of science is not that of an electrical explanation of life in living things, it is at least near enough to that to make the study one of marvelous interest.

KEEP KICKING.

Once upon a time two frogs that had been living in comfort and ease in a cool pool of water were accidentally scooped up by a milkman in a bucket of water, which he poured into his can in order to give his milk more body and thereby increase his revenue. The frogs were astonished to find themselves in an unknown element, in which it was not possible to support life, and they had to kick vigorously in order to keep their heads above the milk. One of them, being disheartened by being shut up in the dark, in an element entirely new to him, said: "Let's give it up and go to the bottom; it's no use kicking any longer." The other said: "O no; let's keep kicking as long as we can, and see what the outcome will be.

Maybe things will change presently." So one frog gave it up and went to the bottom. The other kept kicking, and when the milkman got to town and opened his can, behold the frog had kicked out a lump of butter large enough to float him, and he was sitting on it comfortably. Moral: *Keep kicking.*

ELECTRICITY AND VEGETATION.

The physiological effects of electricity and the electric light upon the growth of plants have been carefully studied for a number of years, and the results already reached are highly interesting for their economical and theoretical importance. The studies have had to do with the application of electricity directly to the plants themselves, sometimes with currents through the earth in which their roots were embedded, and sometimes with the effects of the electric arc light maintained a part or the whole of the time when sunlight was absent.

Plants kept in the light from an electric arc not only grow as in the sunlight, but some grow faster and larger, they produce chlorophyll in abundance, they reach out toward the source of the light and twist this way or that, they assimilate more potash, produce more albuminoids, and yield a larger amount of ash. These phenomena show that the physiological quality of the electric arc light is the same as that of the sun.—*Cosmopolitan.*

A NEW METHOD OF MAKING PALATABLE AND DIGESTIBLE MILK.

Dr. Robert T. Edes, of Boston, gives a valuable way of preparing milk where other methods have not proved useful.

A pint of milk is gently warmed. Into it is dropped, very slowly and with constant stirring, about twenty minims of the dilute hydrochloric acid of the United States Pharmacopœia. The milk should be stirred until it cools. In this way a very fine flocculent coagulum is produced, floating in the whey, which is easily accessible to the digestive secretions, while the whole fluid has lost somewhat of the flat and cloying taste which makes it unacceptable to so many. It will be noticed that milk prepared in this way differs from the various "wheys" in the highly important particular that the casein is retained and used, instead of being separated out as a distinct product, while it avoids the bitterness of pancreatinized milk.—*Boston Medical and Surgical Journal.*

Brief Gleanings. . . . .

TUBERCLE-BACILLI IN THE NASAL CAVITIES.

The ubiquity of the tubercle-bacillus is already well recognized. It has been found on fruit exhibited for sale on the streets, and upon the walls and ceilings, and in the dust of houses occupied by tuberculous subjects. The knowledge of these facts prepares us for the announcement made by Strauss (*Muncener Medicinische Wochenschrift*, 1894, No. 28) at a recent meeting of the Paris Academy of Medicine, that he had found virulent tubercle bacilli within the narsal cavities of nontuberculous persons whose relations necessitated their association with, and frequent presence in rooms occupied by tuberculous patients. Most of these were in perfect health, and presented not the slightest evidence of tuberculosis. These observations emphasize not only the widespread distribution of the bacillus, but also the risk of association with the tuberculous and the dangers of dust, as from the careless street cleaning of our large cities, and house sweeping, and the beating of carpets in the open air; and finally the importance of breathing through the nose, for as is well known the nasal passages act as filters for the air that enters the lungs and stand as a barrier to the entrance of particles whose presence might occasion mischief.

THE STOMACH.

It is not long ago when our knowledge of the gastric functions had the same limitations as little Johnnie's composition on the stomach: "De stomik is a holler organ like a foot ball; it is a organ but it don't make music like a reglar organ nor does it look like one but more as a scotch bag-pipe. When we eat den wat we swaller goes in de stomik and from dere in de blud but wat we drink goes to de hed. De stomik lies above de belt and it is de place where dey hits in a prisefite Some people can stumik a grate deal but gurls as a rool hav a week stomik that is why gurls never can be prisefiters. De stomik has 4 coats and that is more as i have got. when we get a pane in de stomik we call it stomikake and gingertee is good for it. That settels de stomik."—*Pacific Druggist and Physician.*

AN ELECTRIC ENGINE.

Sometime ago we had occasion to mention the new electric engine invented by Johnson & Ries, of this place. Since then new features have been added by the inventors, so that now it is universally pronounced, by all who have seen it, as being the simplest, most durable, and perfect dental engine yet devised. There are no belts or pulleys to break, wear, or rattle. It runs both forward or backward at will, starts or stops almost instantly, runs at any speed desired, and the speed may be changed in a moment. The operator can stand on either side of the chair as best suits the case. There is a brush and grinding wheel ingeniously adjusted that can be used independently of the engine part, and, to make the machine complete, a splendid mallet of the pneumatic type has been added. With all these appliances, it is not cumbersome or bulky, but neat and ornamental in appearance, so ingeniously has it been contrived. We have not space to describe it in detail. They will be on exhibition at the Georgia State Dental Society, at Indian Spring, in June, or a more detailed description may be had from the inventors, Messrs. Johnson & Ries, 306 Second Street, Macon, Ga.—*Southern Dental Journal and Luminary.*

TUBERCULIN NOT DEAD YET.

Dr. Karl von Ruck, of Asheville, N. C., who has had, perhaps, more success with tuberculin, as modified by him, than any other practitioner, is reported to have induced Dr. Klebs, of Zurich, originator of tuberculosidin and antiphthisidine (the latest modification of tuberculin), to join him in practice and the manufacture of the preparations, at Asheville. Laboratories are being erected on a considerable scale, and will soon be supplying the profession. —*Sanitary Era.*

A NEW DANGER IN ENVELOPES.

A recent instance of the dangers of blood poisoning is almost unparalleled in medical history. Recently, while sealing an envelope, a Brooklyn man pressed the mucilage portion of it across his tongue. The edge of the envelope was sharp, and cut his tongue so that it bled a little. The next day his tongue began to swell and pain him. The symptoms of a serious case of blood poisoning were manifest to the doctor, followed within a very short time by fatal results.

AN APPLICATION FOR TOOTHACHE, NEURALGIA, RHEUMATISM, ETC.

The following is an excellent application for local pain, as of toothache, neuralgia, rheumatism, etc.:

℞ Menthol, Chloral, Camphor,	aa 10 grains.

Mix until liquefaction occurs.

(Sig.) Apply locally.—*College and Clinical Record.*

REMEDY FOR INSECT STINGS.

A paint for the stings of insects, in which ammonia is kept in close and prolonged contact with the affected part, is prescribed as follows:

℞ Aq. ammoniæ	150 m.
Collodion	50 gr.
Acid salicylici	5 gr.
M.	

(Sig.) A few drops to be applied to each bite or sting.—*Ex.*

THE NOSE.

The nose, as a factor in the causation of many nervous complaints, has likewise been carefully studied within the last decennium. Headaches, vertigo, insomnia, neuralgia, asthma, vomiting, and other phenomena, owe their origin to some nasal defect, the correction of which has frequently been attended by the most marvelous results.—*Pacific Druggist and Physician.*

HINT ON SETTING CROWNS.

Dr. E. L. Custer, in *Dental Office and Laboratory*, says: "Before setting crowns, wipe the gums around the root with a solution of perchloride of iron, which will prevent weeping, and the most important part of the cement will be protected until crystallized."

[Aromatic sulphuric acid is better.—Editor.]—*Southern Dental Journal and Luminary.*

The W. D. Boyce Advertising Company, of Chicago, announce that hereafter they will not accept any advertising for Boyce's Weeklies appealing to women, which contain words like "Pennyroyal," "Tansy," "French Cure," "Ladies' Friend," "Safeguard," "Married Ladies," "Regulator," "Preventive," or any other or similar words that make the advertisement suggestive. They will also decline advertisements such as "Articles for Men," "Rare Books," "Racy Pictures," "Lovely Females," "Marriage Guide," "Securely Sealed," etc.—*National Advertiser.*

We are exceedingly glad to see a leading advertiser and publisher taking a stand in this matter of indecent advertisements. The leading newspapers and publications of a literary class of the country are becoming so vulgar, dirty, and indecent by the insertion of such advertisements as those enumerated above that they cannot with propriety be allowed in families where they can be perused by young boys and girls. And yet it would seem from the number one encounters from reading the papers of the day that no advertisement is ever refused on account of its indecent wording. The literature which children read have much to do with the development of their moral natures, and it is high time publications intended for general reading were taking some notice of this growing evil.—*Southern Dental Journal and Luminary.*

A FEW days ago a lady, who was on her way to fill an engagement with a dentist, accidentally met her family physician. Being told where she was going, he remarked to her that he would to God there was not a dentist in the city, that they were ruining the teeth of the people, and that she had better let them alone or they would ruin hers. Now this is encouraging to have one's patient talked to and advised in this way, and by one of the oldest physicians in the place. There is where the trouble is; he has practiced too long—outlived his day. The times and arts and sciences have walked quietly ahead of him, and left him sitting in the twilight of his conceit. Well, he does not know it, and "ignorance is bliss," as far as one's own self is concerned; but if he does not learn to be careful about how he indulges in such speech about one of the most important professions of the world, and an adjunct to his own, some one else may find it out, whether he does or not. There are many just such men in the medical profession, but fortunately they belong to the old school—past day, nonprogressive age—and as time wears on these few remaining barriers and small obstacles to a progressive profession will all be melted away like wax before the brilliant rays of a noonday sun.—*Southern Dental Journal and Luminary.*

CHAPIN A. HARRIS MEMORIAL FUND.

Baltimore, May, 1895.

To the Dentists of the United States.

A movement is now in progress to insure a mortuary tribute to the memory of one of the greatest names in the annals of dentistry. It is proposed to adorn his neglected tomb at Mount Olivet Cemetery with a monumental testimonial worthy of his name and fame.

Mr. Ernest W. Keyser, the talented Baltimore sculptor, now in Paris, has modeled a remarkably faithful portrait bust of Dr. Harris and executed designs intended for a monument to be erected over his grave.

It is also in contemplation that, should sufficient funds be realized, a memorial tablet containing an alto relievo bronze bust of Dr. Harris be placed in both the Baltimore College of Dental Surgery and the Dental Department of the University of Maryland.

It is believed that the necessary funds can be obtained through voluntary subscriptions from the dental profession. The Snowden & Cowman Manufacturing Company, of Baltimore, has kindly consented to act as custodians of the "Harris Memorial Fund." Contributions are earnestly solicited and will be thankfully acknowledged. Address The Snowden & Cowman Manufacturing Company, No. 9 West Fayette Street, Baltimore, Md.

.....................................*1895.*

....

The Snowden & Cowman Manufacturing Company,
No. 9 West Fayette Street, Baltimore, Md., U. S. A.

I inclose herewith......................Dollars, contribution to the "CHAPIN A. HARRIS MEMORIAL FUND."

Name..

Address..

NATIONAL ASSOCIATION OF DENTAL EXAMINERS.

The annual meeting will be held in the parlors of the Hotel Columbia, Asbury Park, N. J., on August 5, at 10 A.M., and at other times during the week as becomes necessary, between the sessions of the American Dental Association. It is important that every

State Board be represented. Applications from Boards not in membership will receive immediate attention. It is earnestly requested of the presiding officers or secretaries of the Examining Boards throughout the States and territories that they kindly forward to the national Secretary the full list of officers, with their respective addresses. In view of the large meeting expected at Asbury Park this coming August, the Secretary desires to give every Board due notice in ample time, and likewise obtain a corrected list of the officers to date.

CHARLES A. MEEKER, D.D.S., *Secretary.*

29 Fulton Street, Newark, N. J.

NEW JERSEY STATE DENTAL SOCIETY.

THE twenty-fifth annual meeting (the silver anniversary) of the New Jersey State Dental Society will be held in the Auditorium, Asbury Park, commencing August 1 at 10 A.M., and continuing through Friday, Saturday, and Monday A.M., closing in time for the meeting of the American Dental Association, commencing Tuesday, August 6, at 10 A.M.

The Auditorium is the ideal place for holding a summer dental meeting, being situated in the middle of an entire block fronting the surf, with large windows opening from every side in one continuous row; thirty large windows with north light for clinics and a room three hundred and ninety by twenty-five feet for exhibits. A branch of the Asbury Park post office will be established in the Auditorium, and a bureau for general information with attendants constantly on hand. The New Jersey headquarters will be in the Hotel Columbia, with rates from $2.50 to $3 per day. Several large hotels have made contracts from $2.50 to $4 per day, and smaller hotels from $8 to $12 per week board.

Full particulars and rates, with map of Asbury Park and plan of the Auditorium, will appear in the programme.

CHARLES A. MEEKER, D.D.S., *Secretary.*

29 Fulton Street, Newark, N. J.

AMERICAN DENTAL ASSOCIATION.

THE American Dental Association holds its next annual meeting at Asbury Park, N. J., Tuesday, August 6, 1895. I am requested by the President, Dr. J. Y. Crawford, to give notice that it is the privilege and duty of each State and local Society to appoint and send delegates to the American Association.

Each State and local Society which has adopted substantially the same code of ethics as that governing the conduct of members of the American Dental Association is entitled to one representative for every five members and fractional part thereof.

Blank certificates for delegates may be had on application to the Corresponding Secretary.

Many questions of interest will come up for discussion at this meeting, and every Dental Society in the United States should be fully represented in this, our National Convention.

Emma Eames Chase, *Corresponding Secretary.*

St. Louis, Mo.

A MORNING STAR.

Recently a beautiful "Morning Star" came to the editor of the *Dental Register*, borne in the uplifted right hand of a beautiful bronze statue, which had been fashioned by most exquisite art. Where did it come from? It came from the warm, loving hearts of our *confrères* of the Odontological Society of Cincinnati.

Upon the pedestal of the statue there is appended a silver tablet bearing the following inscription:

PRESENTED TO
DR. JONATHAN TAFT
BY THE
ODONTOLOGICAL SOCIETY OF CINCINNATI.
In appreciation of his efforts to elevate the
Profession of Dentistry during a period of Fifty Years.
April 30, 1895.

This figure, beautiful, exquisite, and valuable as it is, is as nothing to the recipient, compared with the spirit and regard that prompted the presentation. The memory of the occasion, and that which it represents, can never be effaced while life lasts. My friends, may it be done to you as you have done to another; and may your cup of happiness be as full as his has been made by this act of yours!

J. T.

Editorial.

THE "CHAPIN A. HARRIS MEMORIAL."

The movement recently set on foot to erect a "monumental testimonial" over the grave of Dr. Harris in Mount Olivet Cemetery, at Baltimore, should meet with the cordial support of every graduate in dentistry and reputable practitioner. The name of this most distinguished American must forever head the roll of honor and remain inseparably connected with dental history and dental literature. The facts that at thirty-three he organized the first dental school and founded and edited the first dental journal in the world should alone appeal to the hearts and generosity of the profession to secure liberal contributions to carry out the project. But when the additional facts are remembered that he was the author of works on the subject superior to any before written, and that he ended, through his practice of liberally giving of whatever knowledge he possessed, the disgraceful custom of "secrecy" and "concealment," which had, until his time, made it difficult to get at the theories and practices upon which dentistry practiced, it does seem that the debt is one that could never be discharged.

Attention is directed to a letter setting forth particulars, from the reliable house of Snowden & Cowman, of Baltimore, contained in this issue. Contributions sent will be properly credited and receipted for.

We have just received a splendid map of the world, issued by the Rio Chemical Company, of 401 N. Main Street, St. Louis, Mo. Any dentist or physician may have one sent them free of charge, by sending their address to the company.

The Dutch are the largest consumers of tobacco. In 1883 the consumption in Holland and Belgium was 84 ounces to each inhabitant. Next comes Switzerland with 82. Brazil and Turkey follow with 70 each.

MARRIED.

W. K. Slater, D.D.S., of Nashville, Tenn., to Miss Jesse Lee Garrett, of Union City, Tenn., June 24, 1895. Dr. Slater graduated with honor in the Dental Department of Vanderbilt University in 1892. He is now practicing in Nashville, and we predict for him a successful career.

Joe W. Ford, D.D.S., of Bowling Green, Ky., to Miss Jennie Lois Wilcoxson, of Smith's Grove, Ky., April 18, 1895. Dr. Ford is an *alumnus* of the Department of Dentistry of Vanderbilt University, 1889.

Alonzo C. Jones, D.D.S., of Booneville, Miss., to Miss Effie May Walker, May 16, 1895 Dr. Jones is a graduate of the Department of Dentistry of Vanderbilt University, 1892.

G. S. Pearcy, D.D.S., of Jackson, Tenn., to Miss Hattie Gooch, April 16, 1895. Dr. Pearcy graduated at Vanderbilt Department of Dentistry, session of 1892.

Arnold E. Erling, D.D.S., of Chicago, Ill., to Miss Mertie V. Owen, La Crosse, Wis., February 18, 1895.

George C. McKennon, D.D.S., of Clarksville, Ark., to Miss Rosalie Griffin, April 30, 1895.

OBITUARIES.

Vernon A. Williams, D.D.S., died at Cloverdale, Cal., April 29, 1895, in the twenty-fifth year of his age. It is with much sadness that we make the above announcement, and his many friends throughout the South will read the above notice with painful interest. Dr. Williams was a Mississippian by birth, but removed to California early in life for the benefit of his health. He was a gentleman of culture and refinement, and by his genial manners and courtly bearing he gained many warm friends during his student life in the Dental Department of Vanderbilt University. He first attended a course of lectures upon dentistry at the University of Michigan, but concluded to complete his studies by entering the Department of Dentistry of Vanderbilt University, from which institution he graduated with honor in 1892. Upon returning to the State of his adoption he at once entered upon a lucrative practice, but alas! the ravages of pulmonary disease soon arrested his brilliant career. After a noble struggle he yielded to the inevitable and passed into brighter scenes and new relations on the other side of the river of life.

T. E. Cabaniss, D.D.S., of New Providence, Tenn. We clip the following from the *Daily Leaf*, a paper published at Clarksville, Tenn: "New Providence and Clarksville join in mutual grief at the passing away of a good citizen, a kind husband and brother, and a practitioner of local eminence in his chosen profession of dentistry. Dr. T. E. Cabaniss was a native of Montgomery County, having been born at New Providence March 12, 1857. His father was a native of Christian County, Ky., but came to this county about 1850; was a prominent dentist, and under his instruction Dr. T. E. Cabaniss first studied for the profession. Afterwards he graduated from Stewart College, and subsequently took a course in the Dental Department of Vanderbilt University. He has always enjoyed a lucrative practice in Clarksville as associate with his father, as well as a long time by himself. A few years ago Dr. Cabaniss formed a partnership with Dr. J. L. Sutphin, which partnership existed until bad health caused Dr. Cabaniss to retire from the firm. Since then, for several months, his health would not permit of his attending regularly to office practice. He was a member of the Christian Church, and held the high esteem of the whole public."

Dr. H. A. Sale, of Russellville, Ky., died June 13, 1895. Dr. Sale was a reputable practitioner of dentistry, and enjoyed the love and respect of the community in which he lived. His loss will be deeply deplored by all who learn of his untimely death.

Dr. J. J. R. Patrick.

The following resolutions were adopted by the Odontological Society of Chicago, in reference to the death of Dr. J. J. R. Patrick, of Belleville, Ill.

Whereas death has removed from our midst Dr. John J. R. Patrick, of Belleville, Ill., and there has passed from the scenes of human activity a character whose labors have enriched the stores of science; a man who delved fearlessly and steadfastly into those mysteries of nature which call forth the most subtle energies of the human mind, and yield results making the lives of succeeding generations happier; now therefore be it

1. *Resolved*, That in the death of Dr. Patrick the world loses an honored citizen-soldier, the field of science a conscientious, faithful laborer, and the dental profession a light whose extinguishment will kindle the profession's interest in the work he has accomplished for it, and thus extend and perpetuate his good influence.

2. That to the family, friends, and professional associates of Dr. Patrick, we extend the assurance that we appreciate his worth and are grateful that his life had been spared until it nearly completed the alloted time of three-score and ten.

James A. Swasey,
Alison W. Harlan.
Louis Ottofy,
Committee.

Associations.

TENNESSEE DENTAL ASSOCIATION.

The twenty-eighth annual session of the Tennessee Dental Association will be held in Knoxville, beginning July 1, 1895, and lasting five days. The meeting will be called to order promptly at two o'clock.

The morning sessions will be confined to clinics, and the afternoons to papers.

A programme of clinics and papers cannot be given until we assemble; suffice it to say that the indications are as good for as much more as we have in hand, which will be ample.

Bridge work will dominate the clinics.

Practical subjects for all papers.

The State Board of Dental Examiners will be in session during the meeting.

A paper by an oculist: "The Dentists' Eyes."

A number of new appliances.

A day of recreation: "Fourth of July."

And the following paragraphs for you to think of until we meet:

In order that no time be lost and that each one may help to make the meeting a success, I have arranged, as concisely as possible, a number of headings which I place in your hands—that you may ponder over and make notes upon—by which means we will be able, at a moment's notice, to let our light shine upon questions which need the action of many minds for the public good.

No. 1. What changes should be made in clinical demonstrations to secure better results than hitherto?

No. 2. Has any dental society a right to reject the membership of a dentist whom the State law accepts as a worthy practitioner?

No. 3. Are you in favor of making a certificate issued by any State board a passport to practice in any State?

No. 4. Can alveolar dental abscess arise after complete sterilization and obliteration of the canal by an impervious filling, and if so, from what cause?

No. 5. After filling apex of a tooth, do you consider it imperative for the success of the operation to fill remaining portion of canal up to the tap hole filling?

No. 6. What is the most satisfactory antiseptic and best method of root canal sterilization?

No. 7. Have you ever known abscess upon one or more sound teeth caused by disarranging the articulation by extracting one or two teeth?

No. 8. Is not operative dentistry liable to the same injury from the too-prevalent use of plastic stoppings as occasioned to prosthetic practice from the introduction of vulcanite?

No. 9. Considering the fact that dentistry is largely mechanical, do you believe that there would be larger attendance if the whole time of State societies were spent in clinical demonstration by competent men?

No. 10. Are you in favor of having all papers read and discussed by the National Associations reach you through your journals?

No. 11. What are the best means of diagnosis of pulp classification in its several forms?

No. 12. To what extent does the process demand treatment?

No. 13. How shall it be treated (*a*) with respect to its prevention; and (*b*) remedially? WILLIAM H. RICHARDS, *President.*

NATIONAL ASSOCIATION OF DENTAL FACULTIES.

THE annual meeting of this body will be held at Asbury Park, N. J., on Saturday, August 3, at ten A.M. It is very desirable that all colleges having membership be promptly present at that hour, as much important business will be before the Association, and the time alloted is usually short for the work to be done.

The Executive Committee of the Association will meet on Friday previous at ten o'clock, at the same place. All business for that committee should, so far as possible, be in their hands before the meeting, in order that there may be no delay.

J. TAFT, *Chairman Executive Committee.*

TENNESSEE DENTAL ASSOCIATION.

THE annual meeting of this association convenes at Knoxville on Monday, July 1, and we predict a large attendance. President Richards has been untiring in his efforts to work up a just interest among its members, and has prepared a programme to cover five days, on which he has the names of many of the most enthusiastic in the profession in the State.

Knoxville, under the shadow of the great mountains skirting our eastern border, is never hot nor disagreeable at this time of the year; is beautiful and attractive, and no one feeling the least pride in his calling should fail to be present at roll call. We give the programme in full. Though somewhat late, we hope it will reach every dentist in the State in time for the meeting. Lay aside your office duties, and help make this first visit of the Association to the extreme eastern portion of the State an occasion. You and your patrons must be the greatest losers if you do not.

PROGRAMME.

Monday, July 1, 2 P.M.

Address of Welcome....................Gen. J. C. J. Williams, Knoxville.
Response.................................. Dr. D. R. Stubblefield, Nashville.
President's Address..................Dr. William H. Richards, Knoxville.
Evening, 8 o'clock, Informal Social Meeting.

Tuesday, July 2, 8:30 A.M.

Clinics.

1. Porcelain-Bridge-Downie Furnace ....Dr. Saunders, Chattanooga.
2. Contour Amalgam Filling ....Dr. J. O. Templeton, Winchester.
   Paper on Clinic........................Dr. G. C. Sandusky, Shelbyville.
   Dr. L. G. Noel, Nashville, will open discussion.
3. Bridge and Crown Work................Dr. R. N. Kesterson, Knoxville.

2 P.M.

Papers.

1. Dental Text-books for Public Schools .....Dr. P. D. Houston, Lewisburg.
2. Baneful Effects from Injudicious Extracting.
   Dr. R. D. Crutcher, Lewisburg.
3. Incidents of Country Practice................Dr. L. D. Wright, Dickson.

Wednesday, July 3, 8:30 A.M.

Clinics.

1. Logan Crown......................... Dr. Thomas P. Hinman, Atlanta.
   Paper on Clinic........................Dr. J. P. McDonald, Shelbyville.
   Dr. A. W. Palmer, Chattanooga, will open discussion.
2. Bleaching Teeth with Pyrozone...............Dr. R. B. Lees, Nashville.
3. Bridge Work..........................Dr. Thomas P. Hinman, Atlanta.
4. Articulating Crown......................... Dr. A. A. Francis, Knoxville.

2 P.M.

Papers.

1. Dentist's Eyes..........................Dr. Masters, Oculist, Knoxville.
2. Dental Laws and Needed Amendments....Dr. J. L. Mewborn, Memphis.
3. Loyalty to Our Profession.................Dr. B. D. Brabson, Knoxville.

Boat will start at 5 P.M. for moonlight excursion on the Tennessee.

THURSDAY, JULY 4, 8:30 A.M.

Clinics.

1. Bridge Work............................Dr. A. R. Melendy, Knoxville.
2. New Appliances..
3. New Especial Appliances and Improvements in Bridge Work.
Dr. William H. Richards, Knoxville.
4. Miscellaneous Papers, also Paragraphs sent you, will be discussed at will of the body.

FRIDAY, JULY 5, 9 A.M.

Clinics.

1. Surgical Clinic, Local Anæsthetic..........Dr. H. E. Beach, Clarksville.
Paper by...............................Dr. R. E. Bullington, Memphis.
Dr. Henry Morgan will open discussion.

2 P.M.

Papers.

1. Hygiene.................................Dr. A. J. Cottrell, Knoxville.
2. Inoculation by Dental Instruments and the Consequences.
Dr. D. R. Stubblefield, Nashville.

Election of Officers.

Place for Next Meeting.

Adjournment.

EAST TENNESSEE DENTAL ASSOCIATION.

THE East Tennessee Dental Association held its twenty-eighth annual meeting at Harriman June 11 and 12. On account of the attendance being small on the first day, the programme was not taken up in regular form. The citizens of Harriman had made preparations for a blow-out such as had never been given to this Association before, but fate seemed to be against us. The second day brought only a few more, and it was decided by the Executive Committee, together with the local committee, that the entertainment part of the programme should be canceled, which was done, much to the regret of the local committee. The welcome address (which was prepared by Rev. W. H. McGlaughlin, of Harriman), to have been delivered at the public meeting, was read before the Association on the afternoon of the 12th. The response was by Dr. W. H. Richards, in the absence of Dr. Fowler. Below we give Dr. McGlaughlin's address:

O where did dentists come from,
And why did you arise?
Many answers have been given
By the witty and the wise;

But I shall not discuss them,
For on good theology
The reason is not far to seek
Why dentists there should be.

Says Paley in his writings:
"Wherever you can find
Correspondencies in nature,
There's the evidence of mind;
As lungs for air, and air for lungs,
As beauty for the eye,
The eye for beauty in return,
So sounds and ears comply."

If this is true, as sure it is,
Then what do teeth demand?
"Why food," said he, but wiser we
Know 'tis the dentist's hand.
Before you dentists came to earth,
Let who will dare, deny,
A large part of creation
Was a "*hollow* mockery."

"Dentists for teeth, and teeth for them,"
Says law of man and plant;
You came because of toothache
And "to *fill* a long-felt want."
Anatomists have sometimes said
That as the ages move,
A generation will appear
That not a tooth will have.

Who cares? With teeth will go their aches.
You dentists will be kind:
You'll furnish teeth that know no pain,
And we shall be resigned.
The dentists are fraternal—
No monopolists in you,
And yet you are peculiar;
If you watch, you'll see 'tis true.

I belong to many orders,
Whose signs and grips are naught,
But the *grip* of a good dentist,
Once felt, is ne'er forgot.
Though for unjust monopoly
Your heart with hate is full;
Is there another set of men
Who have so strong a pull?

Ah, no! this to your credit,
  If your hold doth cause us woe,
So soon as we are bettered
  You are willing to let go.
The religion of a dentist
  I do not know about,
But that it is a good one
  There's little room for doubt.

You surely are not infidels;
  That's not to your disgrace;
For, pulling out our treasures,
  You put others in their place.
"Men shall be known by what they do,
  The company they keep,"
Are old and well-tried sayings
  That have foundation deep.

But you will say on any day,
  If not your dignity beneath,
That, like the horse, all gentle folk
  Are best known by their teeth.
The religion of our Father
  Taught that up in heaven,
To all good men and women,
  A crown shall still be given.

But you have much improved
  And won a great renown,
Because on earth to all who pay
  You grant a golden crown.
Come to our hearts, O dentists,
  With your grips and pulls and crowns;
We are truly glad to see you,
  Take our smiles, we have no frowns.

Give us your drugs, pull out our teeth,
  No pain, but rather fun!
Make us new sets of pearly jets,
  But before this is begun
Just look about our city,
  Our homes and blocks so fine,
Our mountains and our valleys,
  Our schools and churches nine.

Welcome to all, thrice welcome!
  While among us you remain;
We trust you'll so enjoy it
  You will all come back again.

The extempore response by Dr. Richards, of Knoxville, was in his happiest vein, and we greatly regret our inability to publish it, as no stenographer was present, and in no other manner could justice be done this fine effort. The following resolutions were adopted by the Association:

1. *Resolved*, That our thanks be tendered the proprietor of the Hotel Cumberland, for kindness shown during our visit.

2. *Resolved*, That we hereby earnestly desire to express our appreciation of the hospitality of the citizens of Harriman for their proposed manner of entertaining our members, and we regret that severe illness has detained at home quite a number of our members, thereby preventing the fulfillment of the excellent programme arranged for this Association. We desire to express our thanks for the efforts of the President and Dr. Brause, who labored so assiduously for the success of the meeting, and whose untiring work in the interest of the Association should have met with the largest attendance of this Association.

The following officers were chosen for the ensuing year: President, R. A. Melinde; Vice President, Dr. Warrensfels; Secretary and Treasurer, Dr. George C. Brause; Corresponding Secretary, Dr. Buchanan; Executive Committee, Dr. Brabson (Chairman), Dr. Palmer, and Dr. Shotwell.

Knoxville was voted as the next place of meeting. The following were elected to represent the Association at the American Dental Association, which meets at Asbury, N. J., August 6, 1895: Doctors Cook, Smith, Bilmeyer, and Palmer, of Chattanooga; Doctors Brabson, Richards, and Melinde, of Knoxville; Dr. Shotwell, of Rogersville; Dr. Fowler, of Greenville; Dr. Grant, of Athens; Dr. Buchanan, of Dayton; and Dr. Brause, of Harriman.

T·H·E

DENTAL HEADLIGHT.

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Original Communications.

PRESIDENT'S ADDRESS BEFORE THE TENNESSEE DENTAL ASSOCIATION.

BY W. H. RICHARDS, D.D.S., KNOXVILLE, TENN.

WE have met together to carry out the usual programme of comparing and trying, by the square of each other's experience, the principles of our science as we individually see that they should be applied. Let us endeavor to so shape our course on this occasion as to bind us more closely as a body, and to have an eye single to the importance of our calling to our fellow-man.

On assuming the position of President of the State Dental Association, I was astonished to learn that less than one-fifth of the dentists of the State were members of the society, and less than one-tenth among the regular attendants. My efforts have been to arouse an interest, which will be a failure unless the incoming officers keep up the movement; for no radical change can be wrought for good until the idea has been first entertained by the hearer, then invited to stay awhile, and finally takes possession of the host and goes forth to leaven the whole.

My correspondence with the dentists of the State developed the fact that, up to date, demonstrations of a mechanical and surgical nature were more in demand than papers on theory.

My efforts to meet the above demand prove that there are more ways of getting work off on the other fellow than I had dreamed of. I therefore offer the suggestion that a number of qualified operators be appointed at each annual session to clinic the year following, and a number to prepare papers upon the demonstrations.

More money is necessary for conducting demonstrations in keeping with the rapid strides of our specialty, more particularly for laying before the people the cause of decay, which makes our specialty a necessity. Let us do this by increasing our attendance, then exact of each man attending a definite membership fee, payable only on attendance; and no man, I am sure, would object to this fee when he secures reduced hotel and railroad rates. I have many times witnessed large attendance, not more than half of whom joined the association; such should not have the benefit of reduced railroad and hotel rates, hear all the proceedings of the society, witness the clinics, and leave the burden of expense upon a few, as is customary. My remarks are not meant to apply to this meeting; I am simply sowing seed for a better harvest.

This is the first time the State Society, now twenty-eight years old, has ever held a meeting in Knoxville, and in connection with this fact is a coincidence which will long be remembered, that this meeting is honored by the Presidents of our two National Associations, the American and the Southern, both of which have a world-wide reputation. This is probably the first time in the history of the two great associations that their Presidents have attended a State dental meeting together, and more curious still is the fact that the one is President of the American, which holds its meeting north of the Mason and Dixon line, while the other is President of the Southern, which holds its meeting south of the line; and it gives me pleasure to state that both of these gentlemen are residents of Tennessee. And when we recall the fact that it was through the suggestion of the Southern Dental Association that the initiatory step was taken to put on foot the great Columbian Dental Congress, which, by the assistance of the American, was the greatest effort for dental science ever made, we have cause to feel proud.

I, as an American citizen, am proud of the fact that the science of dentistry had its birth in the United States; and as a student of that science I am proud that Chapin A. Harris was the founder of my *Alma Mater*, the oldest dental college in the world.

I am pleased to call your attention to a movement to erect a suitable shaft to mark the resting place of this man, whose name and deeds should ever be kept before the young men of our country, more especially before the dentists.

I have urged on many occasions the importance of having somewhere a place suitable for perpetuating the memory of those in the profession who have labored without reward. When we consider the number of men in the world who possess the necessary qualifications to step forward and mark for all time a special line of thought and action for the benefit of suffering humanity, as compared with the multitude who live and die for self alone, our praise should not be stinted, nor our efforts cease to do them honor while they live, and when they have passed to their lasting reward keep fresh their memory.

In our individual efforts for existence many of us are prone to circumscribe our vision by our needs; in this we are blind to the fact that broader action is more elevating and ennobling. How often we find ourselves in the attitude of spreading our mantle of charity to the breeze, singing praise to the dead, bedecking his tomb with flowers; whereas if we possessed, in a small degree, the courage of the man who takes a stand and dies in a single-handed conflict to establish broader ideas among his fellow-men, we would now be enjoying each other, and realizing while we live that "He lives in vain who lives to himself!" We have cause to congratulate ourselves and our section, and may the example of the men who labor for the love of science and the amelioration of human ills be not forgotten!

In my address to you some months ago I advocated a summer school, which would, on account of the thoroughness of the work, although the sessions would be short, soon become known and appreciated by the profession, and would constitute a drawing card. In the responses I had, I know there is no surer way of augmenting the attendance.

Since the prohibitory law is now in force in all countries, it has thrown upon the United States the responsibility of taking care of all students our many institutes graduate every year; and it behooves the young men who contemplate entering our ranks to consider the outlook more closely than ever before.

It seemed to me imperative that the standard of dentistry be raised in order to lessen the attendance, else the fees would go so low—the supply being greater than the demand—as to make the cost of a three years' course and the time spent worth more in other directions.

The dental law in our State had to admit many dentists to practice to obviate opposition to the passage of the law. Many of them are as incompetent now as then to stand an examination that would permit them to practice in other States requiring examinations, and others are debarred from States which require a diploma; hence they are forced by a chain of circumstances, and a lack of previous training, to remain where their lines have fallen, forcing the latter-day, well-qualified dental student, starting in practice, to accept fees already established, which will not justify him for the efforts he has made.

The outlook is not promising for the man who hopes to lay by sufficient to sustain his declining years, and when I call your attention to another plain, a broader field of competition, with a Richmond in it wielding a two-edged sword with a recklessness of prices peculiar only to the commercial man, we cannot but recognize the *syndicate dentist.* He is hired by a corporation at so much per month, his gold and silver weighed out to him; all his material is checked off to him; he is supplied with goods purchased in wholesale quantities, and goes forth to practice against his classmate upon a basis of unequal advantage, disregarding all the fundamental principles which underlie and sustain the profession. All of this, gentlemen, is forcing the standard of dentistry to trail in the dust.

Let me not be misunderstood. If a man chooses to give his service away for a paltry sum, let that service sustain the profession he represents; but when a man, under the cloak of a profession, as we find the latter-day politician and syndicate dentist, seeks the place because he has an opportunity to palm off a job on an unsuspecting public, he is a fraud. It should be the business of every dental organization to educate the people so that they will not cast their pearls before men who disregard them. It would be as reasonable to expect silken purses from sows' ears, and whistles from pigs' tails, as to expect a high standard of dental operations within the limit of the simplest and the most inexpensive.

There is no branch of business which calls for as much discrimination and good judgment. The dentist is called on to operate upon material, with few exceptions, that other artisans would spurn. Notwithstanding this, there may be back of this more perversity than the seven swine carried into the sea. Nor does it matter from what source obstacles may arise. He must meet them and sacrifice himself to a proper fulfillment of his mission.

In view of this, I hold it a duty we owe to those seeking admission to our ranks that we give them the benefit of our observation, and assure them that much is expected of them if they would take front rank. Few are qualified by nature to fill the position to their credit, hence the rank and file of the profession is subject to more fluctuation than possibly any other.

It is a profession in which our most brilliant successes must be felt to be appreciated, and most of our efforts are painfully correct.

It is not the mission of the dentist to destroy, to extract, to pull down or out; disease will do all this for mankind. We live upon the depressing influence of civilization, the consequence of which is premature decay.

The dentist's position in the world was like that of the new woman—there was a place for him, but it took a long time to find it. We should not allow our specialty to cause us to neglect our duty to our State.

LOYALTY TO OUR PROFESSION.*

BY B. D. BRABSON, D.D.S., KNOXVILLE, TENN.

PERSONALLY I cannot imagine any one incentive more prolific of good results to a cause than a genuine loyalty to its principles; and on the other hand, there is nothing more hurtful and dangerous to a cause than a disloyal disposition on the part of its supposed friends. Loyalty strengthens, but disloyalty weakens. In the preamble to our *Magna Charta* we find the phrase: "We the people of the United States." What did that signify? It meant, in the language of Benjamin Franklin: "All must hang together, or they would hang separately." It meant that there must be a genuine loyalty to the principles set forth in the Constitution, should success attend its declaration. We are members of a profession which, in point of useful and practical beneficence, is second to none. When we retrospect the work of dentistry, we feel that there is just ground for a professional pride, which is enhanced by a closer allegiance to its well-grounded principles. On the same principle that the indissoluble union of the States was formed is all union made strong. The doors of our dental societies are wide open, and the well-disposed and ethical practitioner is cordially invited to join our ranks. The moment a member becomes disloyal, by a course of conduct not in keeping with the laws and regulations of the dental societies, he is an enemy of such organizations, and is dealt with accordingly.

This is preëminently a day of organized power, and all history shows that a more solid and durable advance is possible under the potent agency of organization than otherwise. This being the case, I submit that the proper way to advance a cause for which we may labor ever so assiduously is to connect ourselves with well-organized societies, and by a loyal response to its mandates yield ourselves obediently to the powers that be in such authority, and work with a might and a will that will characterize us as loyal subjects. I am afraid that some of us try to see how little we can do for the good of our profession; how much we can get that is good, and how little give in return. Is that honest and manly? If I am disposed to emphasize the spirit of loyalty to our profession, it is because of an honest conviction that our own interests should be subordinated to that of dentistry. All truly professional men, it seems to me, are or should be dominated by an earnest desire to assist in elevating, to the highest point of excellence, their vocation, thereby raising themselves above the ordinary level, and becoming a part of the strongest and best type of citizenship.

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*Read at the annual meeting of the Tennessee Dental Association.

It is every man's inherent and sacred duty to always exercise his highest skill in everything he undertakes. A sense of common interests and of mutual assistance will produce the most patriotic and loyal results. We should cultivate each other, and endeavor to know more of each other. Some one has said, "Isolation is an inveterate enemy of the generous sentiments;" and Tolstoi says, "I cannot seek a culture which separates me from men."

Do we, as members of the Tennessee Dental Association, respond cheerfully and readily to the demands of our State Society? Listen: The President of this Association sent out one hundred requests for information on vital questions, and received thirty-three responses. Is that loyalty to our profession and State Society? It is to be hoped that our worthy President's successor will not be chagrined by such a lack of interest on the part of those who are members of a profession to which we all owe allegiance. I learn from statistics that there are four hundred and forty-six registered dentists in this State, and, from a catalogue of names furnished by the Secretary, that there eighty-six names on the register. These figures speak with no uncertain sound. If the Tennessee Dental Association can commend itself to the dentists of the State as a power for good, for edifying and strengthening its members, and cementing them into an indissoluble union for the enactment of mutual protection—and this is what it has done—why does not every dentist rally to its support, and give it his indorsement and encouragement by an unalterable fealty to its interests? I would that I could see every dentist in the State a member of this Association, working in harmony with each other, in brotherly love, each preferring the other, presaging a millennium of dentistry lasting more than a thousand years. And why not encourage this state of beatitude? Do we not all admit that it would give us the greatest pleasure and solid comfort? For, after all, he lives most who acts the noblest and does most for the amelioration of his fellow-man, thereby attaining to the highest degree of satisfaction; not living so that his name will be unhonored and left as a myth or a colorless memory.

OUR DENTAL LAWS AND NEEDED AMENDMENTS.*

BY J. L. MEWBORN, D.D.S., OF MEMPHIS, TENN.

THE subject "Our Dental Laws and Needed Amendments" having been assigned to me by the President, I shall endeavor to show why there are constantly increasing demands for more rigorous laws to maintain uncontaminated that highest state of reputability attained by the genius, the culture, and the labors of the dental profession, as well as for the protection of the public against the mutilations and robberies of the quack and the charlatan.

In every State and territory in the American Union, and in nearly all civilized foreign countries, there are laws in operation regulating the practice of dentistry. The almost universal adoption of such laws is sufficient proof that the health, life, and safety of the public demand such legal enactments.

By this universal consent, backed by the decisions of the highest courts, it is no longer an open question, but a firmly settled doctrine that "where the successful prosecution of a skilled calling or learned profession requires a certain amount of technical knowledge and professional skill, and the lack of them will result in material damage to one who employs him, it is a legitimate exercise of the police power of a State to prohibit any one from engaging in the calling who has not previously been examined by the lawfully constituted authority, and received a certificate in testimony of his qualifications to practice the profession." This principle applies to many other trades and professions.

This police power rests with the "legislative department, and having plenary power over the whole subject, it alone must be the judge as to what is wise and expedient, both as to qualifications required and as to the method of ascertaining those qualifications; and so long as it keeps within the constitutional requirements the courts can exercise no supervisory power."

With these elements of strength and power, you might say, almost in the hands and under the control of the skilled and brainy men of our profession, it is painful and humiliating to contemplate the weakness and inefficiency of our dental laws. With few exceptions they are framed after the same general plan, or copied from an original model whose descriptive title claims that it is intended "to promote a higher education in dentists, to regulate the practice of dentistry, to protect the public against quackery and empiricism therein, and to punish violators thereof."

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* Raad at the July meeting of the Tennessee Dental Association.

We know that a much stricter standard of skill than the ordinary is required of the dentist when he assumes to use a remedy or perform an operation that may endanger the life of the patient. What would legally be considered ordinary skill in the qualification and experience necessary to perform the ordinary operations on the teeth would be gross ignorance and negligence where the dentist advertises or holds himself out to the public as a specialist in the use of general or local anæsthetics for the purpose of performing these operations in a painless manner. He is held, under the legal interpretation, to have more than ordinary skill, and is expected, and should be required by legal enactments, to possess and practically use the highest skill and knowledge his profession has attained, when he dares to endanger the life and health of his patient by the reckless and indiscriminate injection of cocaine nostrums into the circulation for the painless extraction of teeth.

"Certainly," says an able editorial in the *Cosmos*, "the ghastly record of fatalities consequent upon the use of cocaine preparations is long enough to demand a halt, and that the use of this drug be placed on a clearly defined legal basis."

In two papers published by Dr. Mattison, medical director of the Brooklyn Home for Habitués, on cocaine poisoning, covering a period from May 23, 1887, to March, 1891, he cites thirteen deaths and nearly two hundred less lethal cases. In another paper, covering a later period, increasing the fatal record, he describes two cases: strong men, stricture; twenty minims of four per cent. solution of cocaine thrown into the uretha—not hypodermically—produced violent convulsions, and in spite of all efforts, death in four minutes. A young woman in the hands of a complexion artist suffered great pain from the application of a strong solution of carbolic acid to the affected part. To relieve this a four per cent. solution of cocaine was freely applied—not hypodermically. In a few minutes she became excited, said she felt strange, walked to the window, and fell dead.

He emphasizes the need of great care in all cases of cocaine anæsthesia by the following pertinent conclusions:

1. Cocaine may be toxic.
2. This effect is not rare.
3. There is a lethal dose of cocaine.
4. This dose is uncertain.
5. Dangerous and deadly results may follow doses usually deemed safe.
6. Toxic effects may be the sequence of doses large or small, in patients young or old, the feeble or the strong.
7. The danger is greatest when given under the skin.
8. Cardiac or renal weakness increases the risk.
9. Purity of drug will not exempt from ill result.
10. Caution is needful under all conditions.
11. Réclu's method, Corning's device, or Esmarch's bandage should be used when injecting.
12. Nitrate of amyl, hypodermic morphia, hypodermic ether, alcohol, ammonia, and caffeine should be at command.

History has repeated itself along lethal lines as regards cocaine so often, says the doctor, that it really seems surprising that any one at this day should question its powers for harm. It may not be known to all that cocaine has killed in a smaller dose than morphine, but that is a fact. It may not be known to all that cocaine has killed in shorter time than morphine, but that too is a fact. "If, then, we have such a narrow margin of safety in the use of cocaine in accurately known doses, the use of a nostrum containing cocaine, in which the existence of the drug is either denied or is of unknown amount, becomes little short of criminality." In spite of this grewsome record, which is but a fractional per cent. of all its untold, therefore unknown temporary and permanent injurious and often fatal, after effects, yet "fools rush in where angels fear to tread."

I suppose that every State and territory and county and important town from Puget Sound to the Florida Keys, and from Wool-astook to the Rio Grande, has been canvassed by the nostrum vender, selling to dentists the exclusive rights to use these dangerous cocaine compounds. Our offices are periodically flooded with fancy-colored leaflets offering to give us a half dozen bottles of their secret "hell-fired" stuff if we will send on three dollars for the best hypodermic syringe ever made, and two or three extra needles thrown in. Some of these seductive offers come from men claiming to be dentists. For references they often inclose pages of flaming certificates from men with "D.D.S." to their names. Often there are those with an easy conscience who have never learned to say no, but greedy of gain, and eager to double or quadruple their practice, with no proper knowledge of dentistry, ignorant of the most elementary features of the action of cocaine, therefore easy victims of the painless nostrum vender. These do not recognize the danger signals exhibited by distressed nature in the pallid cheek, the clammy brow, the labored breathing, and the wild, anxious stare. With a judicious admixture of "cheek, "gab," red rubber, and a hypodermic syringe loaded with something, they know not what, the ignorant public becomes an easy prey, upon whom is entailed, by a wholesale mutilation of the young and old, the loss of useful organs that should have been preserved through life, and a worthless substitute, as a perpetual souvenir of their stupendous folly.

From the experience of others and my own observation I make the broad assertion that there is a greater loss of physical beauty and facial expression, more direct suffering from malnutrition, and consequent shortening of life, and more nervous and osseous diseases entailed on posterity by the ill-advised and unnecessary loss of the natural organs of mastication, attributable to the painless nostrums and cheap methods of the advertising quack, than from all other known diseases and accidents combined. These acts of vandalism and robbery are openly perpetrated from town to town throughout the country, and upon prominent corners in every city, by a *special* permit in every dental law, which provides "that nothing therein shall be so construed as to prevent any person from extracting teeth."

As Dr. Sweeney said in his able paper at Old Point Comfort last August, "while the law is not competent, and does not presume to dictate what steps a person may take to attract custom, deception and misstatement are not legitimate means to that end; hence, to announce old and well-known agents, under fictitious names, as wonderful new discoveries or inventions, or dangerous drugs as perfectly harmless, is as clearly a violation of the spirit of the law as it is to obtain money by means of any other misstatement or false pretense." Like the spider and the fly, his blandishments and finespun flatteries are only intended to beguile the unsuspecting victim into his "Dental Infirmary" or "Painless Dental Parlor," to be mutilated and robbed when he is there. From the machinations of this vampire, ensconced within a cunningly devised lair of printer's ink, the blood of slaughtered millions of valuable dental organs cry aloud from toothless gums for protection.

"The time is fully ripe, from the known dangers incident to such practices, for securing proper legislative control which shall relieve the community of this menace to life and health, and the dental profession from a foul blot upon its record." Away with a law which grants a license to practice a skilled profession, with no power to revoke that license for the most disreputable conduct and dangerous practices! I admit that our laws have done some good by stimulating a higher education in dentists, but have failed utterly! utterly! utterly! in the most important objects, the protection of the public and the punishment of violators.

These defects are being discussed and agitated by our dental journals, by our State societies, by our national boards, and our national associations. Two very able papers, by Drs. Noble and Sweeney, of Washington City, on dental legislation, were presented to and ably discussed by the Southern at Old Point Comfort last summer. Two points, at least, seemed to have had the unanimous support of the Association: one, that if a lawyer could be disbarred for falsifying his word or the record, then a dentist who is guilty of malpractice or unprofessional conduct should have his certificate of registration revoked; another was that some national law should be passed that an examining board's certificate granted upon an examination in one State should entitle the holder to practice in any other State.

A memorial from the examining boards of the States of New York, New Jersey, Delaware, Rhode Island, Connecticut, Pennsylvania, and the District of Columbia was presented to the National Association of Dental Examiners, and adopted as expressing the sense of the Association. This meeting was composed of delegates from the examining boards of the leading States. Their action was significant and the proposition radical, and reads as follows:

To the National Association of Dental Examiners.

Gentlemen: Delegates from the examining boards of New York, New Jersey, Delaware, Rhode Island, Connecticut, Pennsylvania, and the District of Columbia, in conference assembled, respectfully offer for your consideration the opinion that ours is an advancing profession, our watchword is "Progress," and we ask that your influence shall be actively directed to secure thorough preliminary examinations in every dental college in every State.

We think that the interests of our profession demand such uniformity in standards of examinations as can be obtained by State Boards always striving after higher and better attainments, and with a view to ultimately bring about a safe, judicious, and fair reception of certificates from State Boards of other States. It is our opinion that it would be most desirable that a law whose provisions should be uniform, yet whose phraseology might be different, so as to suit differences of environment in the various States, should be enacted in all the States. It is not practicable to have any such law enacted in all the States at once; but if such a law were enacted in half a dozen leading States at once, others would gradually fall into line and adopt similar ones. We are in favor of bringing the responsibility for defective education as directly as possible upon the offending school, with a view of making every diploma real and reliable evidence as regards the holder's ability and proficiency. Therefore we will use our influence as practitioners, as well as members of examining boards, to obtain the selection by competent authority in each State of an independent body, disconnected from the institutions which educate, with sole authority to grant licenses and admit to practice.

A still more radical change is proposed by Dr. Charles H. Dunning, of St. Louis, who says:

During all the agitation regarding the qualifications necessary for the practice of dentistry, the following plan has suggested itself to me as being the most satisfactory of any, inasmuch as it will not only produce better dentists, but will give us a general standard of ability:

1. Have a National Board, whose duty shall be to formulate a series of questions each year for the use of the different State Boards, and also to determine what other qualifications, if any, are necessary for the practice of dentistry.

2. Have State Boards appointed by the Governors of the different States, the boards to meet twice a year and submit such questions to applicants for examinations as have been furnished by the National Board, and to grant diplomas to the successful candidates. These diplomas are to be *prima facie* evidence of qualifications as required by the National Board, and recognized by the laws of every State in the Union.

3. Compel all dental students to apprentice themselves to some dentist to remain in continuous service for three years, except during the sessions of their colleges, when they must be in attendance. Thus they would get both practical and theoretical instruction.

4. Permit no college diploma to admit to practice, colleges being merely places for instruction. By this means permits to practice dentistry would be given on merit only, and a dentist with a diploma from an examining board would be free to go and practice his profession anywhere he felt inclined; and we would also insure the public against the malpractice of those who are obtaining their diplomas from our colleges without sufficient knowledge of dentistry.

I have thus given you a summary of the leading points under discussion. At the coming meetings of the American and Southern Associations many needed dental laws may crystallize into some definite form. Memorials have already been adopted, and committees appointed. The fight is on. The questions at issue are: Shall we have a uniform system for the preliminary training of our students? Shall we have a uniform system of examination for our graduates? Shall we have uniform requirements for admission to practice? Shall we have a uniform certificate of registration, recognized by the laws of every State? Shall our examining boards, who grant license to practice dentistry, have no power to revoke that license when its high privileges are prostituted to the base uses and nefarious practices of the peripatetic nostrum vender and unprincipled quack?

These are questions that now claim the attention of every conservative dentist in America. I regard it a privilege that Tennessee now enjoys, through her State Association, here assembled, as one of the last to adopt a dental law, by some official action, to be one of the first to adopt the advanced reform movement. But let me beg of you not to appoint any more standing committees. It took one standing committee twenty-one years to get our present law passed by the Tennessee Legislature. Another standing committee was appointed four years ago to secure amendments to that law, and it is standing still.

If my voice could influence national dental legislation in this its transitory stage, I should hail Dr. Dunning's plan with shouts of joy as a welcome inspiration that should be embraced and adopted by all. Amplify his four cardinal principles into a decalogue, engrave it on tablets of stone, which shall be a law unto all the States, and make Dr. Charles H. Dunning our Moses who shall lead us away from the fleshpots of Egypt to the land of promise. Abolish the national boards of dental examiners and college faculties; constitute a National Council, composed of an equal number chosen from the State Boards, the college faculties, and the national associations, with one expert in general and local anæsthesia. Let these meet annually, formulate a series of questions, provide a uniform diploma, prescribe uniform fees for registration, uniform fees for examination, uniform penalties for violations, and determine all questions of dispute or matters of reference arising in the different State Boards. Let these fees be sufficient to enable State Boards to enforce the law, no part of which is to be paid into the county or any other fund, and no part of the expenses of the board to be paid out of the State treasury. Require the colleges to have frequent lectures delivered on anæsthesia, and the subject familiarized by ample clinical exhibitions of various anæsthetics in the infirmary. Require the awarding of all diplomas by State Boards to be approved by the National Council. Require the diploma to show two special subjoined blank forms, which shall be a part of the instrument. One, in the form of a certificate, as follows:

This is to certify that..has passed ....examination on anæsthesia, and is hereby...........permission to practice the same.

[Signed] ....Expert Anæsthetist.

The other blank to be in the form of an agreement, as follows:

I hereby agree to surrender this diploma, with all rights and privileges therein conveyed, on demand of the examining board, should it be proven to its satisfaction that I have been guilty of infamous, disreputable, or unprofessional conduct.

Make every requirement of the law plain, and the means and methods of punishment ample.

Since writing the above, I have received the June number of the *Southern Dental Journal*, containing a very able editorial on this subject. The author gives extracts from the recent Connecticut law, showing that they have taken the lead in this matter with power to revoke a certificate of registration for unfitness, imcompetency, or unprofessional conduct.

Also that by the English law a dentist is liable to have his name erased from the register if he has at any time or anywhere been convicted of felony or a misdemeanor, or been guilty of infamous or disgraceful conduct professionally.

Further, that an applicant for a diploma at the Royal College of Surgeons of England, of Scotland, and Ireland is required in advance to sign a solemn obligation not to advertise nor use other unbecoming modes of attracting business, nor to allow his name to appear in connection with any one who does. He closes with the opinion that this is the greatly needed remedy at the present time; that all State laws should have provisions empowering boards of examiners to revoke all licenses for disgraceful or unprofessional conduct; and these licenses should be granted with this understanding.

I might go further, to show that France, the Danish Provinces, and some of the South American States forbid dentists to use anæsthetics, even cocaine, laughing gas, or ether spray; that many of these countries revoke their licenses for unprofessional conduct; and that their laws are not violated with that reckless impunity so notorious with us.

In closing this paper I wish to reiterate and reënforce my opinion that the intent of a law "to regulate the practice of dentistry" means to convey to the examining board power to restrain or, if necessary, to suppress the reckless, the vicious, the incompetent dentist as the surest means for the protection, the good, the safety and welfare of all persons committing themselves to his care.

I leave the subject with you. I am done, but *not Dunning* (*Charles H.*).

THE BANEFUL EFFECTS OF INJUDICIOUS EXTRACTION.

BY R. D. CRUTCHER, D.D., LEWISBURG, TENN.

WITH some of our profession it would seem that nature had committed a gross error in not consulting them to determine whether or not the various teeth of the oral cavity should exist and play the part which nature has designed for them, or be left extinct. In fact, it would almost seem that they are not fully satisfied, or they would not sacrifice so many of these valuable organs which could be retained for many years by a small amount of ordinary skill, which would be far more profitable to both patient and operator.

The question that I would suggest in this paper for discussion is: Under what circumstances should the various teeth be extracted, and to what extent might treatment be carried to preserve them? The highest aim of nature in the arrangement of teeth is evidently to give a perfect articulation for masticating purposes. Very seldom do we find irregularity with the molar teeth in an unbroken arch; but instead, note carefully the beautiful arrangement of these twelve organs as nature has placed them in the arch. The grinding surface of the inferior is about on a level with the superior, and in the same parallel plane. In addition to the perfect contact of the grinding surfaces, each tooth is so arranged as to be a support to its fellow. While this is true, I ask would it be possible to remove one of these without defeating nature to some extent?

From the above you would infer that in no instance would I recommend the extraction of any of these organs. I am not an extremist, however, on this subject, but I do think the cases calling for extraction are few. Is it manly for us to stand up in the face of the public, holding the titles we do, and commit the gross errors of injudicious extraction? I hold that we are inexcusable, and should be brought before the courts, and be made to answer for such malpractice; and the time is coming in the near future when every man who dons the title of our profession will be held accountable, as much so as those outside. I am glad that we have in most of our States the boards of examiners, which have been very essential in putting down this form of quackery, which has been more detrimental to the human family than any other known cause. If the trouble ceased with the loss of the organ or organs, as it may be, we, as dentists, would make no further fight on this subject; but the trouble only begins here. Take an arm or a leg from a man's body, and from the day you do this the trouble begins with him, lasting as long as breath, leaving him a cripple to fight the battle of life, when we know that it is impossible under such circumstances to fulfill our mission here according to the laws of nature. Now if this be true, how much more so would it be with the person or persons who have had the dental arch broken by injudicious extraction, rendering them incapable of mastication, and placing their physical organism on the plane of retrograding? You take a crosscut saw and break one or two teeth out on one side of the median line, and it will still do very good work on the other side of the line; but when you break both sides, then the saw fails to do its proper work. The same is applicable to the dental arch, though we find it in a more aggravated stage, for the teeth remaining in the saw will keep their relative positions, but not so with the teeth in the arch, for every effort of the soft structure is to throw the teeth forward; and especially is this true until about the fiftieth year of age. It seems that nature herself realizes the baneful effects, and by closing up the unnatural space attempts in a feeble way to right the wrong which has been perpetrated. The next point which I want to bring out for discussion is this: Can these teeth continue their natural position to each other when such a revolution is going on in the oral cavity? I say not. Then if this be true, is it not an impossibility for any one in such condition to prepare properly the food for the alimentary canal, which places more work on the digestive organs than they are able to cope with; hence the many ailments of poor, depraved humanity which arise, under other circumstances might have been quite different?

We never have correct articulation any more after the dental arch is broken. The teeth, tipping forward, throw the anterior cusp or cusps out of the parallel line from forty to ninety degrees, leaving the posterior cusp only to come in contact with its antagonist, if it were so fortunate as to not leave it altogether, placing the teeth in such relation to each other that it is impossible to grind the food for proper insalivation; not only that, but it checks the flow of saliva, which throws a greater amount of work upon the secretory organs of the alimentary canal. While this is one of the greatest evils, it is not the only one we have to deal with. It affects beauty, it causes deformity of the jaws, and breaks the correct articulation of speech.

I have confined myself in this paper principally to the molar teeth, but I will now say something about the twenty anterior teeth, which play a greater part in destroying speech than their fellows of which we have just spoken. Do you suppose that to do their pastoral work in a cultured and refined neighborhood a church would select a pastor with one or more of these organs missing, rendering him to a greater or less degree incapable of the correct articulation of words? If so, you are very much mistaken; and to-day that class of men are being relegated to the rear. I will place myself on record to-day as saying that not many years hence the man who has experienced the baneful effects of injudicious extraction will find it very difficult to secure a position in the business world, for they will not employ such men, because their articulation of speech is indistinct. They want men, not pieces.

There is nothing which mars the beauty of woman more than this deformity of the face. It changes every expression, and there is no known means by which it can be fully restored by human skill; for it is an impossibility for man to equal that of nature in perfect normality. I have seen cases in which there could have been considerable improvement, but they were not normal; and in these cases it was not necessary to resort to extraction, the only thing necessary being ordinary skill and good judgment, in connection with proper regulating appliances, which can be secured at any of our depots when we are not prepared to manufacture them ourselves.

I have some models here which I wish to exhibit that perhaps will go further toward convincing those who have not studied on this line closely.

1. Mr. A; age twenty-three; with right inferior six-year and left inferior six and twelve year molars missing; he has also the superior first right bicuspid crown missing, with a portion of the root still remaining; he has the wisdom teeth in place, completing second dentition in full. On the right side the space made by the loss of the six-year molar is more than half closed by the coming forward of the twelve and eighteen year molars; and, as you readily

see, the improper articulation to which I referred in the body of my paper. The wisdom teeth on both sides of the upper jaw have no antagonist, being deprived by the forward movement of the lower teeth; on the left side we have the elongation of the superior six-year molar due to no antagonist.

2. Mr. C; age twenty-four; dentition complete; the upper arch unbroken, while the lower arch has three absent teeth, the second right bicuspid and left second bicuspid and first molar, these teeth having been extracted within the last two or three years. We have the forward movement of the molars on both sides of the lower jaw, and a slight movement backward of the remaining eight anterior teeth. On the right side we have presented to us the lower six-year molar moving outward from its natural position about four lines, and above, on the right side, the second bicuspid has elongated from one and one-half to two lines. On the left the second bicuspid and first molar have elongated, but not so marked as the one on the right, due, no doubt, to the more recent extraction of the teeth on the left. This would, as you readily see, render the young man incapable of proper mastication.

3. Mr. W; has completed dentition below, but the upper wisdom teeth have never made their appearance. He has only one missing tooth by extraction, and that is on the left side of the lower jaw, it being the six-year molar. As you see, the space has about half closed by the forward movement of the twelve and eighteen year molars. While there has been no loss by extraction on the right side, you can see its baneful effects, produced by the wedging of the jaws apart, due to this forward movement on the left, which renders mastication incomplete.

*A RETROSPECT.**

BY J. A. COTTRELL, D.D.S., KNOXVILLE, TENN.

It would require quite an amount of thought and research to set forth the progress of our profession in the last three generations, while to enumerate the benefits that have accrued to mankind as the results of the efforts of the members of our profession who lived and practiced during the latter part of the nineteenth century and the earlier part of the present one would be next to impossible; but suffice it to say that at this time in the year of our

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* Read at the meeting of the Tennessee Dental Association, July, 1895.

Lord one thousand nine hundred and ninety-nine, when the world seems to have well-nigh reached its climax of enlightenment, we are prompted, in reviewing the results of their labors, to say: "Well done, thou good and faithful servants."

It will be interesting on this occasion, I think, to note a few of the evidences of their work, and their methods of attaining the results, so far as the benefits to mankind are concerned, to say nothing of the progress of the profession *per se.*

They were not slow to recognize the increasing tendency to dental degeneracy that was prevalent at that time; that there were causes in operation which, unless checked, threatened to ultimately deprive man of his masticatory organs; and, acting upon the well-established truth that "to abort an effect the cause must be removed," their work was begun.

Ignorance has always been the bane of mankind, and notably so in this case. The public did not place the value upon their teeth that nature intended; they did not know of the great degree of intimacy and extreme bonds of sympathy that exist between the teeth and the general system; they were not aware of the fact that their own degeneracy and own vices would be transmitted to posterity. Never was a greater and more solemn duty imposed upon mankind than when the edict went forth that the sins of the fathers should be visited upon the children even unto the third and fourth generations; but the goodness of a merciful God has been abundantly shown, since the inherited and acquired virtues are transmitted as well. Acting upon this principle, they began the slow and tedious process of instructing the people: first, by impressing upon their patients the ultra importance of keeping their own mouths in a healthy condition, of retaining their teeth as nature intended, and of keeping the mouth pure and sweet, instead of it being a pool of contamination for the whole system. Thanks to the fact that the majority of their patients were women, these ideas were at once grasped (by the more intelligent people).

Then came the more laborious work of striking at the root of the evil, of preparing the way, that we of this and those of succeeding generations might have better teeth and better physiques. To have good teeth, it is necessary to have a good constitution; to have a good constitution, it is necessary to have inherited the groundwork, then to assist nature in caring for and building it. They taught the mothers the importance of observing the strictest hygienic measures during gestation, and of the greatest care of the infant after birth. Inattention in this particular had long been recognized as one of the chief factors of degeneracy. It was, at the time of which we speak, customary to turn the child over to the nurse immediately after birth, to be cared for, to be nourished, until able to care for himself. The consequence was, of course, a lack of attention, the child dependent on cows' milk and various artificial foods, the composition and nutritious qualities of which no one knew. What we want is to impress upon the mother that there is no care like hers for the child, that which is a labor of love, a mother's devotion; that there is not, nor will there ever be, any proper food for the infant except that which nature intended —to wit, the milk from a healthy mother.

The mothers were taught to look after their children closely during the period of dentition. The pathological conditions attending this period are due mainly to the process of eruption, but by watching the child closely, and a judicious use of the lancet, little or no trouble is experienced. But, thanks to his care during early infancy, and to his inheritance, dentition is now, with a few exceptions, a perfectly physiological process, as nature intended.

The problem of impressing upon the public the necessity of caring for and retaining the temporary teeth was at that time an eyesore to the profession. The fact that they are temporary for a long time deprived them of their proper care and their proper value in the minds of the people. "Since," they would say, "they are only temporary, why have them filled? Why spend money on them? Let them go; and as soon as they begin to ache have them extracted," and were encouraged in such a murderous action by a number of the advertising quacks who advertise to extract children's teeth without charge. The furies of Dante's seventh circle is too mild a reward for such men.

The public schools were utilized as one of the most fertile fields for their labors. Practical lectures were given by practical men, the children were taught the importance of keeping their teeth clean and of living as nature intended, and were taught how to observe these hygienic conditions.

They impressed the fact that greater good was to be derived from attention to general hygiene than anything else. The laws of heredity are what they emphasized, and what we should emphasize to-day.

They were persistent in regard to the quality and quantity of food that their patients ate. At that time they ate too much;

their food was highly flavored and indigestible. They have now learned that simpler foods, of a nature that will furnish the masticatory and secretive organs a proper amount of exercise, and furnish the stomach with something easily digested and the system something nutritive, is much better.

Disturbances of a nervous nature are the hydra-headed monster with which we have had to contend. Intellectual and emotional excesses have done more to produce physical degeneracy than anything else. The old idea of stuffing the head at the expense of the body was early eliminated, and now a great deal more attention is paid to physical culture and athletics.

Sexual excess, alcoholism, and venereal diseases were held up in their true light to the people, the ruinous effects of which they had not seen before.

I have mentioned briefly a few of the more important of the evils with which our predecessors had to contend, and now let us notice for a moment the results of their labors; first as to the people at large, and second as to the profession itself.

The first and most important benefit is the increase in the average length of life. During the early part of the nineteenth century about thirty years was the average; now it is fifty. Along with this we might mention that not only do people live longer, but they live better; their lives are more useful since they have better physiques. The *pro rata* of consumptives, invalids, and lunatics is greatly diminished. The men and women of to-day are well developed and strong, mentally as well as physically—people who are not subject to melancholia, are courageous, and able to meet and overcome life's obstacles.

As to their teeth, they have at last learned to retain their natural organs. The glistening rubber plate—the pride of the old operator of a hundred years ago—is seldom seen except in the museum, and he who made "plate work a specialty" no longer has an occupation. The little glass case that contained its half dozen highly polished rubber plates, along with a handful of grewsome-looking natural teeth, with a placard attached informing suffering humanity that by walking upstairs it might procure teeth at five dollars per set, has long since been relegated to the garret or cellar.

The people are no longer "suckers," and no longer are they to be "caught" by the flaming advertisements, such as "painless dentistry," "New York" or "Chicago Dental Company," "low prices," etc. The scheme no longer works, and they who adopted such methods sleep as quietly in their professional insignificance as if they had never lived; and when Gabriel sounds his trump they will awake, only to be confronted by the "souls" of thousands of innocently slaughtered teeth.

It might be suggested that since humanity has made such strides it will not be long until dentists will not be needed. Not so. With all our care and labor, teeth *will* decay, they *will* grow irregularly, salivary calculus *will* accumulate, and the mouth will be subject to a number of pathological conditions. But, because of the labors of our predecessors, disease is reduced to a minimum, and our patients do not postpone treatment. We, like the physicians of to-day, are paid to *keep* our patients well, not to *make* them well. There is now, and always will be, a field for the honest and intelligent dentist. We are amply compensated for our labors since our patients are no longer nervous and hypersensitive. We do not have our hair turned gray by the highly strung and timid patients, as in the past.

The "new woman" has at last found her sphere. She who a hundred years ago threatened to take the supremacy in government and in business, and to consign her husband to the nursery or dish pan, has at last learned that in her home she can do more toward "reclaiming depraved mankind" than anywhere else; that by using the means and opportunities that an all-wise Creator has given her in training and caring for her children, so that they may have as good physiques and minds as possible, she reaches the climax as a humanitarian.

It is very gratifying to note the intelligence that the most commonplace individuals possess in regard to their teeth. They know pretty well what is required in any given case, and woe to the quack who claims more than he can accomplish. I was very much amused a few days since when one of my patients, a little miss of fourteen, suggested that the pain in her canine was probably of a traumatic origin, or it might be from pulp ossification, as her mamma had suffered from trouble of that kind a few years before. Even the children know of the influence of heredity, and are prepared to turn it to good account as far as possible.

This state of affairs is more than pleasing to us members of the profession, as this is the era of the unquestioned supremacy of the honest and qualified dentist. The quack to-day would be like the microbe in the corrosive sublimate solution—there is no life for him.

And let me say to my brethren now present that because so much has been done it does not follow that there is not plenty yet to do. We are only on the threshold of our work; and let me, as one who has grown gray in the field, and who is almost ready to lay aside the mantle of professional duties, bid you, my younger brethren, Godspeed in your noble work.

CONTOUR AMALGAM FILLINGS.*

BY G. C. SANDUSKY, D.D.S., SHELBYVILLE, TENN.

DR. W. E. HALSEY, of Brooklyn, N. Y., in the April number of the *Luminary*, says that "our knowledge regarding our dental alloys is not of the order necessary to the best use of the material, and the place that it occupies with the dental profession as a tooth saver demands a more intimate knowledge of the combined metals and their relative proportions."

It is common with most dentists to buy amalgams from the dealers or manufacturers, and test them in their own practice as to shrinkage, color, edge strength, etc., and select for use in their practice the brands giving the most desirable results.

It is urged by some dentists that amalgams are essential chemical compounds, the combination of mercury with the metals composing the amalgams taking place in definite automatic ratios. Whether this becomes an established fact or not, it furnishes us with a logical basis for our future work. This suggestion is made by Dr. Kirk in a paper read before the New York Odontological Society.

Dr. J. Foster Flagg, the great plastic-filling advocate, had a favorite formula for a contour alloy of about 62 silver, 33 tin, 4 gold, 1 zinc; the smaller percentage of zinc designed to aid in retaining its color, and yet not enough to materially impair its edge strength, which is a very important factor in contouring with amalgams. We find every manufacturer claiming all these fine qualities for his preparations.

A quarter of a century ago Lawrance and some others made amalgams that were not without merit. Later, King's "Occidental" was introduced. His formula, I believe, is nearly equal parts of silver and tin, and as I have found, embraces as near all that we hope to find in amalgams as any brand that I have used. The desirable qualities in amalgam are freedom from shrinkage, color, solidity, edge strength, etc. We know that all amalgams necessitate the presence of mercury in their combination, but an excess of mercury, either too great or too small, does not give the best results. A surplus of mercury should not be seen exuding under pressure of the instrument while introducing the filling, neither should it be so dry as to require a heated instrument to make it plastic and cohesive. Different preparations seem to require different amounts of mercury to incorporate them. In a mortar or in the hand, or, what I like better, lay the mass upon a smooth, hard surface, and with a stiff, small spatula rub well and until the crystals are all broken or dissolved, and the mass becomes thoroughly incorporated. If the mass is too soft, it evidences too much mercury, which can be remedied by squeezing out the excess through a piece of chamois skin with a pair of plyers until the proper consistency is attained.

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* Read at the meeting of the Tennessee Dental Association, July, 1895.

With all good amalgam there are proper proportions by weight; but as we cannot get at this in such small quantities and so often, a few times mixing as above indicated will give the proper ratio. It is with amalgam as with other preparations: we seldom know the exact formula. We know also that when properly used it may be utilized to great benefit.

In a short paper like this it is impossible to take in all that is naturally and necessarily involved in the subject of contouring a tooth with amalgam. For instance, if we have a merely exposed pulp, it must be provided for by covering with thin gutta-percha wafer or some nonconducting substance that the nerve will tolerate. This can often be done successfully with fully exposed pulps by means of a little oxychloride of zinc, moistened with creosote, covering with gutta-percha wafer.

Again, we find pulpless or dead teeth which must be cleansed and treated, a full discussion of which would make this paper too lengthy. Then such subterranean substances as the operator's judgment may dictate in filling the root and bringing it up, if possible, to gum margin.

Sometimes we find the tooth dead and all its environments diseased. Then still another course must be pursued; but as none of these are strictly within the purview of this paper, we merely mention them as points that cannot be overlooked, and one or more of them nearly always present in cases where contouring with amalgam is required.

Now, supposing all to be right so far as the pulp and roots are concerned, and the crown so decayed as to make it necessary to contour it, and the work is to be done with amalgam. We would first remove all the decay *possible;* better leave a little discolored dentine just over the pulp than to expose it. Nature's protection, though half destroyed, is better than ours. Then remove all decay from the walls out to the edges at every point; then, by means of chisels, burs, or other suitable instruments, cut the edges back well until you are assured of both their soundness and strength, beveling the edges so as to let the filling material overlap or turn over the edge, so that it forms what we may call a half dovetail, thereby letting the beveled edges of dentine rest within the metal composing the filling, keeping in view during the whole operation the restoration of the lost contour of the tooth. After the amalgam has become hard, finish with wheels, burs, disks, and burnishers, giving the tooth its proper contour at all points, and where it joins the dentine press to a perfectly even surface; and we have a not unsightly molar that will do years of good, comfortable service. I say "molar," because I do not think an amalgam should ever be used where it is exposed to view.

THE DEVELOPMENT OF THE DECIDUOUS TEETH WITH CONSTITUTIONAL DISTURBANCES.*

BY R. B. LEES, M.D., D.D.S., NASHVILLE, TENN.

One of the most interesting subjects to the dentist is the study of the commencement, growth, and development of the deciduous teeth in the fœtal subject and infant to the time of their eruption.

That nature places the germs in the position in which they are to grow and develop into the fully organized tooth is, in itself, of intense interest to the student of histology. But there are other things in this connection of equal interest.

It were no more strange that nature developed thirty baby teeth than twenty, other than the fact that perhaps there is not sufficient room in the arches for a larger number.

It seems that nearly every development of the jaws and teeth is according to a fixed law in nature. Our purpose, then, should be not to disturb this harmonious arrangement. The usual order of things in relation to the teeth is that the tooth substance is first deposited in soft tissue and afterwards hardens or calcifies, as we generally call it. By calcifies, or calcification, we mean the infusion of the lime salts (principally phosphate and carbonate of lime), which changes the nature of the tissue and renders it hard.

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*Read before the State Dental Association at Knoxville, Tenn., July 4, 1895.

Would it not be interesting and a pleasure to us all were we able to see in the first instance the deposit of soft tissue, and later, by a few weeks, the transformation into hard tooth bone? Calcification of the teeth requires a number of years before it is completed, and this fact in itself should receive more attention and consideration at our hands. Unfortunately we are denied a peep at this wonderful physiological action.

From this time forward the growth of the tooth attracts our attention; for up to this time very little progress has been made in that direction. But now as the pulp, the primitive organ, begins to elongate, we speak of the tooth growing. These germs, which a short time ago were held together by the epithelial band, have broken away from their original moorings. They have assumed, and individually have constituted themselves, an independent agency for their own maintenance. The bones have not been inactive during this time, but are beginning to grow up around this as yet incomplete tooth. In the course of a few months we will find that each tooth is securely intrenched in its own crypt.

Physiologists tell us that there are three agencies at work to develop and bring forward this germ into a perfect tooth: first, by the elongation of the pulp; second, the calcification of its surface to form the dentine of the root; and third, by the adhesion of the dental sac, or follicle, to its solidified surface. The force by which the teeth are propelled through the jaws and gums, and take their place in the arches, has never been made out or understood with any degree of certainty. But in the absence of any better theory I suppose we must accept this one, although not altogether satisfactory. We recall cases where children are born with the teeth fully erupted; and again, teeth are often developed, remain hidden from view in the bones, and after some years of seclusion make their appearance alongside of their predecessors. This last example, you understand, applies to the permanent.

The nicety of that harmonious relation which ought to exist in development and growth should receive greater consideration than we have hitherto given it. That the baby teeth develop, grow, and are erupted without any special constitutional manifestation is a noteworthy fact in some cases. But I am sorry to say (especially in the cities) that this is the case in the fewest instances.

My reference to this subject is to enable me to say a few words bearing upon the care which should be given infants and children during this time. A perfect physiological action means perfect health; and the sooner we realize this fact, the better for all concerned. If nature has so nicely arranged these laws of growth and development in the one instance as to present the tooth without constitutional disturbance, the question naturally arises, Can we not in large measure have it so in many more, if not all other cases? The idea that prevails in society to-day is big heads, little bodies, to the detriment of the child now and hereafter. It is an exceptional case to-day to find upon the streets of our cities a strong, healthy, vigorous infant or child.

There is but one solution to this most interesting question: More attention must be given to the diet, clothing, and exercise of the child before we may hope to have this condition changed or the teeth erupted in the normal way. Nor is this plea made simply on behalf of the deciduous teeth, but on the part of the permanent teeth also; for we must not lose sight of the fact that they (the permanent teeth) are beginning to form and undergo calcification long before the cutting edges of the temporary incisors make their appearance through the gums. It would seem, then, that the mother must be encouraged in the proper diet and necessary amount of exercise, in order that not only bone, muscle, and brain be properly developed, but tooth bone as well. The evil impressions of infancy and childhood are responsible for the poor condition of the permanent teeth. We seem to lose sight of the fact that, instead of one set of teeth in the infant's mouth but a few months old, we have the germs of nearly all the permanent teeth, some of them quite far advanced, and some of which are beginning to harden. We have then a double responsibility with the parents of these infants and children. The necessity of the care of the body and the mouth was never more imperative than at the present day, when weak constitutions, enfeebled digestion, and frail bodies are the order of things. Our work of education, so far as infants are concerned, is to be accomplished through physicians principally; that of the children through the parents. Is it not a fact, however, sad to contemplate that we as a profession are in large part to blame for the wonderful amount of ignorance that prevails, both in and out of the profession, on these most important subjects? The average dentist to-day is unfamiliar with the simplest facts concerning this subject, to say nothing of the manner of treatment to prescribe in a case.

The development and eruption of the teeth are said to be a physiological action, but in the majority of cases, and on account of environments which surround the child, they very often assume a pathological condition.

Teeth should be erupted normally, and without producing such general disturbance of the system as is witnessed in so many cases at the present day. I do not deny nor fail to recognize that the evolution of the tooth is a physiological action, but I do say that it is remarkably singular that in the majority of cases we have at the time of the eruption of the teeth all of the signs of the system being generally shaken up. As a profession we need more light upon the subject. This will come as the result of close observation and study. If we could share the responsibility of these cases more with the physician, I believe that a better state of things would result to our little patients from the coöperation. I recognize that dentists generally are unfamiliar with this subject and the treatment to be prescribed; yet at the same time I must say that I believe that in many cases the physician is in no better condition, for the extent of ignorance displayed of the knowledge of the eruption of the teeth, both deciduous and permanent, is surprising.

The use of the lance in the hands of the ignorant practitioner of medicine in the depletion of the gums, and for an imaginary erupting tooth, calls for our solemn protestation; but we are in large measure to blame for this condition of things.

For the past few years it has been my good fortune, as well as pleasure, to see and examine the mouths of little patients in the effort to erupt their baby teeth. These little patients mostly reside in the mountains, away from the contaminating conditions which affect those who live in cities. In most instances their nourishment consists of the mother's milk. They are constantly in the sunshine and pure, fresh air, the result of which is that they erupt their teeth normally, and in nearly all cases without the slightest constitutional disturbance. Recently it was my pleasure to make some observations of a race of people who live an outdoor life and eat a frugal diet. Now what was the result of these observations? That the women give birth to children without apparently any suffering or special discomfort, and within two days are engaged again in the daily routine work; that children erupt their teeth without the usual sickness and discomfort manifested in this country. We cannot hope for any relief on the part of nature until we put ourselves in full accord with her laws. The moment that we attempt to thwart her plans, from that moment we find ourselves in trouble. The nearer we follow the laws of nature as we understand them, the nearer we will come to the correct solution of this great question.

ADDRESS ON "THE CARE OF CHILDREN'S TEETH."

BY THE STATE BOARD OF DENTAL EXAMINERS.

To Instructors in the Public Schools in the State of Tennessee.

Recognizing the necessity of impressing upon children early the importance of the care and preservation of their teeth, the Tennessee Dental Association, at its meeting in Knoxville in August last, requested us to prepare an essay inviting your attention to this vital subject. You are requested to impress upon your pupils that it is of greater consequence to their health and happiness to observe the few rules here laid down than the observance of most other hygienic laws.

Placed at the beginning of the alimentary canal, our teeth hold an important relation to the digestive function, and through it to the entire body. They are inseparably connected with the nervous, circulatory, and respiratory systems. Hence their preservation constitutes an important art in medicine; for without healthy teeth, there cannot be thorough mastication; without thorough mastication, there cannot be perfect digestion; without perfect digestion, there cannot be proper assimilation; without proper assimilation, there cannot be nutrition; without nutrition, there cannot be health; without health, it is impossible to attain the highest perfection of mental, moral, and physical growth.

Upon the soundness and perfection of the teeth, therefore, much depends as regards the health, comfort, personal appearance, and voice. Every one should recognize the importance of their preservation, and impress upon children early in life the necessity of keeping their teeth and mouths clean and in good hygienic condition; for if neglected, the teeth frequently become not only diseased and produce great suffering, but are lost before middle life.

Decay is not the only disease to be combated, but frequent irregularities, incrustations of tartar, diseases of the gums, and around their necks, producing foul breaths, disordered stomachs, and indigestion.

Children should be advised to rub their gums with soft cloths and thoroughly brush their teeth, freeing all spaces between them from food and other accumulations, after each meal and before retiring.

Whenever cavities of decay exist they should be stopped, to prevent the further destruction of the tooth and avoid the loss of its function.

That the children of the State of Tennessee may be impressed with these facts, we address this notice to you, begging that you will not only now, but through the coming sessions, repeatedly endeavor to bring to their attention the important truths set forth in this circular, and thus help the dental profession in its efforts to add to the comfort, happiness, and average length of human life.

W. T. Arrington, *President;* H. E. Beach, *Secretary;*
J. L. Mewborn, S. B. Cook,
W. H. P. Jones, F. A. Shotwell,
State Board of Dental Examiners for the State of Tennessee.

Selections. . . . . . .

A NATIONAL DENTAL MUSEUM.*

Some years since I claimed exemption from jury duty as a surgeon, and, after a legal battle, was sustained in this position, and no dentist has since then been placed in the jury box.

Many cases in actual practice have sustained this position. A case in point: The jaw of Hon. William H. Seward, the Secretary of State under President Lincoln, was broken in his attempted assassination. A dentist of New York (Dr. Gunning) was called upon to take charge, and did take charge at the request of the Surgeon General of the United States, and conducted the case to a complete restoration, and to the satisfaction of every one.

If we are dental surgeons, and a specialty of the medical profession, let us take our proper place in the National Medical Museum and Library, unfortunately so little known and slightly appreciated by the dental profession throughout the country.

Here we have in a fireproof building a valuable collection of specimens and books, under the efficient management and fostering care of Dr. John S. Billings, and maintained at government expense. It is a part of, and on a par with, the other scientific departments of government.

Here should be found a history of dentistry and a general depository for dental archives of all things pertaining to it which may have a present or a future historical or educational value.

That the profession is imbued wlth the spirit of homage to those whose labors and achievements have elevated our calling to a place among the liberal professions was made manifest at the late gathering in Philadelphia to honor the name of Horace Wells, the discoverer of anæsthesia.

Could there be a more appropriate place for the repose of memories, whether of marble, bronze, or painted canvas, or one's own laboriously collected library?

Such a museum or library would be an appropriate place for the proposed statue of Dr. Horace Wells, surrounded by a library such as that of Dr. H. J. McKellops, of St. Louis, and the historical collection of Dr. Taft's committee of the World's Columbian Dental Congress.

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*Read before the Massachusetts Dental Society at its annual meeting, June 5 and 6, 1895, by Dr. H. B. Noble, of Washington, D. C.

Here should be recorded all the great and important inventions and scientific discoveries that have been and are being made, and the names and records of eminent and celebrated men who have labored for the advancement and elevation of our profession. Many of these records are now in the keeping of local societies and individuals, and if not soon cared for will be lost to the general profession.

Such a museum, library, and memorial hall, in connection with the National Medical Museum, would receive the aid and fostering care of the general government, and be under its care and protection.

If we work in harmony with the medical profession, such a hall and library of our own can be secured.—*International Dental Journal.*

A CEMENT WHICH PROMISES TO BE OF VALUE IN MICROSCOPY.

It has long been known that glycerin and litharge make an excellent cement for many purposes, and the writer suggested its use in microscopy in the *National Druggist* as far back as 1884. Some months ago he had occasion to build some deep cells for opaque objects, and used the lead cement for the purpose. Up to the present time the cells seem to be all that could be wished. The following is the method of preparing the cement: Take any convenient quantity of litharge, and reduce it to an impalpable powder by porphyrization. Place the powder in a crucible and expose to a bright red heat for some time. Keep this powder in closely stopped vessels. When needed for use mix with sufficient anhydrous glycerin to make a paste, and with the paste quickly form your cells by the aid of a penknife and the turntable, using the latter as a potter's wheel is used, forming up the sides of the cell by gentle pressure from the knife blade. This cement hardens very rapidly, resists almost all fluids, even mineral acids, and does not shrink appreciably in drying. It is not affected by any degree of heat short of the boiling point of glycerin. It adheres most firmly to any surface to which it may be applied, and can thus be used for cementing almost all kinds of substances—metal, porcelain, glass, etc. Only a small amount of the litharge and glycerin should be mixed at a time.—*Microscopical Journal.*

Editorial.

AN INVESTIGATION OF THE PHYSICAL CHARACTERS OF THE HUMAN TEETH IN RELATION TO THEIR DISEASES AND TO PRACTICAL DENTAL OPERATIONS, TOGETHER WITH THE PHYSICAL CHARACTERS OF FILLING MATERIAL.

THE series of papers under the above title, which have appeared in the recent issues of the *Dental Cosmos*, from the pen of Dr. George V. Black, have attracted general attention and excited much comment. Such a vast array of figures, valuable tables, and such careful preparation for accurate scientific work, have never before been presented to the profession. The painstaking precautions against errors, and repetitions of experiments to secure accuracy, are abundant evidence of the earnest efforts of Dr. Black to arrive at exact conclusions and to meet every possible condition.

Having provided himself with the most delicate and accurate instruments for making measurements, taking weights, determining strength and elasticity, and a machine for cutting cubes of dentine enamel and filling materials of exact sizes and forms, he began a work the results of which must attract universal attention, for the like of it has never before been undertaken.

It is not our intention to present a *résumé* of this work here, but to note some of the results which are directly at variance with generally accepted theories and teachings of older writers, and to invite that careful study of the papers which they should receive at the hands of every member of our profession.

Such work, with the technic teaching of to-day, will do far more to elevate dentistry in the estimation of the scientific world than legislation and advanced requirements for education. For the first are in the highest sense scientific, while the latter are vain efforts to keep up appearances.

That some of his conclusions are surprising and startling, it is only necessary to quote a few which are at variance with the prevailing opinion: "Perhaps the general reader, on first entering upon a study of the tables, will be struck with the close similarity of the specific gravities of the teeth. The range is very limited indeed, being only ninety-seven thousandths of a volume in one hundred and eleven persons, including all possible errors. I think that the thought of the profession, derived from clinical observation, has been that the teeth of individuals presented strong personal characteristics as to density and the relative amount of lime salts and organic matter that they contained; or, in other words, the thought has been that some persons had teeth that were much denser than those of others, and that the basis of the difference was the relative amount of lime salts and organic matter. A study of the result shows that there is a difference, but it is so slight as to be almost nil. But that there is a difference between the individual teeth of the same person that is much greater than the difference in averages of the teeth of different persons."

"The whole range of variation in the percentage of lime salts is 4.67 per cent., or from 61.08 per cent. to 65.57 per cent., the general average being 63.54 per cent. How little the effect of this should be to hardness or softness of the teeth can be better appreciated by comparing human dentine with ivory, or dentine from the tusk of the elephant, which, according to the few determinations that I have had opportunity to make, gives an average of 47.06 per cent. of lime salts, 16.42 per cent. less than in human dentine, and yet the difference in hardness does not seem to be very notable. This, however, is much less than seems to have been thought by the profession, judging from expressions found in the literature. The idea prevalent that caries of the teeth was in some way due to or favored by a lack of lime salts, has evidently tended to the maintenance of the notion that teeth which were rapidly melting down with caries were soft or poorly calcified, while those that remained free from caries were dense."

The conclusions with reference to the teeth of childbearing women are no less striking: "That no diminution of density or of the percentage of lime salts occurs in the teeth of women during the period of childbearing on account of this fact. The broad claim that woman's teeth become soft during the period of childbearing has been based upon the clinical observation that their teeth suffer more from caries during that period, and seems to be purely an hypothesis based on that other hypothesis that soft teeth decay more rapidly than hard teeth. We must find some other explanation of this clinical fact."

No less to be wondered at are these statements: "The hypothesis, then, that diseases of the peridental membranes are more liable to occur in persons who have dense teeth is not maintained." "That neither the density of the teeth nor the percentage of lime salts which they contain has anything to do with the liability of the teeth to suffer from caries. In other words, the teeth of persons who suffer much from caries are just as hard, just as dense, just as heavy, and contain just as much lime salts as the teeth of persons who do not suffer from caries." "The popular notion that white teeth are soft teeth is found to be an error." "There is no basis for the supposition that the teeth of children under the age of twelve years are too soft to receive metallic fillings."

Again: "The active cause of caries is a thing apart from the teeth themselves, acting upon them from without; and from a consideration of the facts thus far developed, the logical inference is that the cause of the differences in the liability of individuals to caries of the teeth is something in the constitution operating through the oral fluids, and acting upon the active cause of caries, hindering or intensifying its effects."

"There is no basis for the supposition that some teeth are too soft or too poorly calcified to bear filling with gold or other metal in use for that purpose, since all are found to be abundantly strong."

These are some of the most striking of Dr. Black's deductions from his first paper, and, as before intimated, are only presented here to awaken an interest in the series. We must be permitted to do so without any comment beyond the assertion that when taken with the known integrity, ability, and learning of the gentleman, together with the frank manner in which he has detailed every step in the work, going into every *minutia*, fortifying himself against every accident and error, the results arrived at must be accepted as conclusive until disproved.

PRESIDENT CRAWFORD.

When it was recorded last year that Dr. J. Y. Crawford, of Nashville, had been elected President of the American Dental Association, and Dr. H. E. Beach, of Clarksville, President of the Southern Association, there was a general expression of gratification throughout the State, and these gentlemen were warmly congratulated. No other State ever held these positions of dignity at the same time, honors of which any State might feel proud. But Tennessee has further reason to rejoice, Dr. Crawford having been elected at Asbury Park to succeed himself, a distinction never before enjoyed by any President of the American Association.

Dr. Crawford was taken seriously ill after opening the Association the first day, and was not able to again attend any of its meetings. The beautiful flowers, and many evidences of sympathy that found their way to his room, attested the esteem in which he was held by the members.

To be chosen to fill the highest office in the gift of the American Dental Association is a preferment which should satisfy the ambition of any man; but to be called upon a second time to assume such responsible duties must be taken as an evidence of peculiar fitness and proficiency.

THE SOUTHERN DENTAL ASSOCIATION.

The Executive Committee has at last decided on the time for the Atlanta meeting—November 5—and from the interest manifested and preparations, it is predicted that the number will exceed any previous meeting. Held during the Southern Cotton Exposition, which is now open, at a time of the year when Northern people can come South in comfort, many who have never before attended the Southern will surely come. One of the questions of great importance to be considered will be the union with the American, and Southern men should be there to say what they think of the proposition. If, as has been suggested, we have too many associations for the best interest of the profession, and it is possible to accomplish more good by concentrating our forces and effecting an organization of a representative character which will do such thorough work as will advance the scientific aspects of dentistry, let us help along in the work, and not be controlled by sentiment or personal wishes in the matter. That each Association must make concessions, sever itself from much of the history of the past, yield in many ways to the spirit of advancement of to-day, and possibly surrender even its identity, let it be done with the recklessness of a schoolboy, without regret, bickering, dissension, or wrangle, but with dignity and order, and in the hope that the new organization may fully accomplish all that is predicted. And then let those who are in a position to give weight, standing, and character bend every energy to build up, by force of moral and intellectual support, a structure which must stamp upon the history of our time the fact that now, if never before, our ranks are filled with conservative and progressive men, who are not dominated by selfishness, self-aggrandizement, or personal ambition.

THE TENNESSEE DENTAL ASSOCIATION.

THE meeting of this Association held at Knoxville in July was attended by about fifty members, and up to the average. The attendance was not as large as usual, and there were not as many from the eastern section as it was hoped would be present. The President's address and the papers read are to be found in this issue, and the discussion of them was spirited and full.

That some good was accomplished is evidenced in the resolutions adopted: One, dividing the State up, and placing each division in charge of a large committee to develop an interest in Association work; another, requesting the State Board of Examiners to prepare an essay on the necessity for care of children's teeth, to be distributed through the State Superintendent of Public Instruction, and to be read to the school children; another resolution indorsing an appropriate memorial building, to be known as the "Harris Memorial Building," to be located at Baltimore or elsewhere.

Nashville was selected as the place for holding the next meeting, and the month of May as the time. Let the change be noted.

AMERICAN DENTAL ASSOCIATION.

THE meeting of this body at Asbury Park, N. J., August 6 to 9, was attended by about five hundred members and visitors. More than two hundred registered.

The meeting was a good one, and the forthcoming volume of its transactions will not only be larger than usual, but contain matter of much more than ordinary interest. The report of the new Committee on Terminology, of which Dr. S. H. Guilford was Chairman, was necessarily brief, but the work in detail will appear in the proceedings, and will prove the wisdom of the undertaking. Much confusion has long existed in the use of terms, and many words have been improperly pronounced, for want of a standard, and because authorities differ so radically; but it is to be hoped that the results of the labors of this committee, composed as it is of men well versed in philology, will at once meet with the approval of and adoption by the profession, and that many mispronunciations and barbarisms which now greet the ears of attendants upon dental meetings will be reckoned among the things of the past.

The original work in anatomy by Dr. M. H. Cryer, portrayed so graphically upon the screen by the lantern, which called forth expressions of wonder and admiration, and filled every heart with pride that it was the result of the labors of a dentist, will be an inspiration to much more investigation in this field. Throughout the hour and a half that Dr. Cryer was addressing the Association on the anatomy of the maxillary bones and contiguous parts, he had the undivided attention of his audience, and at the conclusion was greeted with applause. A college class would not have been as appreciative, and instead of discussion only remarks of admiration and approval were heard.

Asbury Park was not a good place to hold a meeting, and but for the untiring zeal of the New Jersey dentists (who do not know how to do things by halves) there would have been an entire absence of social intercourse. The members were scattered around among thirty thousand other people, the place of meeting separated from the hotels, and the time fully occupied by meetings of the various bodies. Yet, taken as a whole, the meeting was a great success, and a spirit of fraternity and good will continued throughout.

Saratoga Springs was selected as the place of meeting for 1896, and it is hoped that the Executive Committee will establish headquarters, and if possible, arrange to accommodate most of the members in one or two hotels near each other.

LOCAL ANÆSTHETICS.

We hope that every one who uses cocaine, hypodermically or topically, for the extraction of teeth will read carefully the paper by Dr. J. L. Mewborn, to be found on page 151 of this issue. The careless manner in which this drug has been used by the medical and dental professions can be attributed only to ignorance of its deadly character. It has been extolled until the public has come to believe that it is harmless, or nearly so. Almost every journal one reads contains some one's formula for a local anæsthetic of which cocaine is the basis, with which the originator can rob the operation of extraction entirely of pain, the claim based upon a few trials after a few weeks' use, and without specific directions as to the amount to be used, or making any allowance for differences of age, sex, or constitutional susceptibility.

The knowledge of the agent gained by experiments on the lower order of animals at one time it was thought promised to establish it as safe and reliable; but when these experiments were repeated upon the human subject, they resulted frequently in the manifestation of the most alarming symptoms, and occasionally in death.

The amount of cocaine now used for the extraction of teeth, as compared to a few years past, except that employed by the professional tooth extractor, is almost none.

We must look for applications for the relief of pain among those agents possessing local anæsthetic properties of known harmless character. Try the one given below: Do not allow the patient to swallow the mixture, as menthol when swallowed causes nausea.

℞ Menthol	gr. 160.
Tr. Myrrh	♏ 80.
Alcohol	℥ ij.

S. Thoroughly dry the gums and apply freely for a few minutes. Use more freely for a permanent than a deciduous tooth.

PORCELAIN IN THE DENTAL ART.

THAT porcelain crowns, bridges, and continuous gum will, in the near future, take the place of gold crowns, bridges, and the cheaper bases to a very considerable extent, is repeating what must be known to many in the profession.

Already we hear the terms "unsightly," "vulgar," applied to gold crowns in or near the front of the mouth, and except in extreme cases, all-porcelain, Downie, Evans, or Richmond crowns are substituted; and of late years much more attention has been given to continuous-gum work.

The improvements in furnaces for baking—the "Revelation," the "Sharp," the "Downie"—have done much to revive an interest in this work, and have simplified and made easy what was once laborious and disagreeable work. With the advent of the electric furnace we will expect a much greater impetus.

The electric furnace invented by Dr. L. E. Custer, of Dayton, O., is already on the market, while Dr. Taggart, of Chicago, and Dr. H. C. McBriar, of Middletown, N. Y., have almost perfected theirs.

With the electric furnace it will be as easy to bake a set of continuous gum as it is now to vulcanize a rubber plate. We hail the introduction of these furnaces, bringing with them a new era in prosthetic dentistry, and making possible a higher order of artistic work than was ever before achievable.

These gentlemen have devoted much time and study to this work, and deserve especial praise.

Association Proceedings. . . . .

THE TWENTY-EIGHTH ANNUAL MEETING OF THE TENNESSEE DENTAL ASSOCIATION.

KNOXVILLE, TENN., Tuesday, July 2, 1895.

THE Association was called to order by the President elect, Dr. W. H. Richards, of Knoxville, and opened with prayer by Rev. Dr. Morton. Gen. J. C. J. Williams cordially welcomed the Association on behalf of the citizens of Knoxville, to which Dr. J. Y. Crawford, of Nashville, responded in feeling terms.

Next in order came the annual address of the President, which was listened to with marked attention, and upon motion referred to the customary committee, consisting of Drs. Noel, Melinda, and Crenshaw. By special request, Dr. J. Y. Crawford was permitted to read a paper written by Dr. R. D. Crutcher (he being unable to attend the meeting). Dr. Crutcher's paper elicited animated discussion by Drs. Henry W. Morgan, J. Y. Crawford, and P. D. Houston.

Dr. Henry W. Morgan offered the following resolution, which met with the hearty approval of the Association, and was promptly adopted:

> *Resolved*, That the State Board of Dental Examiners be requested to prepare an essay (of about three hundred words) upon "The Care and Preservation of the Teeth," to be printed at the expense of this Association, and to be distributed to the teachers throughout the State by the Superintendent of Public Instruction. Said essay to be submitted to and approved by this Association. Also that the Secretary notify the State Board of Dental Examiners of said action, and request them to consider the same.

Dr. P. D. Houston addressed the Association, advocating the adoption of a suitable dental text-book to be taught in the common schools of the State. The subject was discussed by Prof. White, of the Knoxville High School, and Drs. J. Y. Crawford, A. R. Melinda, Henry W. Morgan, and W. J. Morrison.

Election of new members being next in order, Drs. John S. Cottrell and S. P. Sharp were duly elected.

The society adjourned.

SECOND DAY, WEDNESDAY, JULY 3.

The morning session was by agreement devoted entirely to clinical demonstrations. Dr. L. G. Noel, of Nashville, demonstrated his process of filling teeth with "gutta-percha." Dr. Hinman, of Atlanta, Ga., exhibited the "Hollinsworth method" of crown and bridge work.

Dr. B. D. Brabson, of Knoxville, read a paper entitled "Loyalty to Our Profession," which excited lively discussion by Drs. Henry W. Morgan, J. M. Masters, R. B. Lees, and W. J. Morrison.

J. M. Masters, M.D., *Knoxville specialist*, read a paper upon the important subject, "The Dentist's Eyes."

The Association was highly entertained by the paper, and discussion thereon was participated in by Drs. L. G. Noel, Henry W. Morgan, and J. Y. Crawford.

Upon motion, a vote of thanks was unanimously tendered Dr. Masters for his able and valuable contribution.

Dr. J. L. Mewborn, of Memphis, next presented a paper, his subject being "Our Dental Laws and Their Needed Improvements." Dr. J. Y. Crawford discussed the paper with considerable enthusiasm, giving his views concerning the necessity of modifying the existing State laws regulating the practice of dentistry.

The Association next adjourned, and were tendered a delightful excursion down the Tennessee River. An elegant steamer had been chartered for the occasion by the Knoxville dentists, and the pleasure of the trip was greatly enhanced by the excellent music furnished by the Knoxville orchestra. After enjoying the magnificent scenery along the banks of Tennessee's noblest river, a landing was made at "Long's View," near which is located the Eastern Hospital for the Insane. By special invitation of the superintendent, Dr. Michael Campbell, formerly of Nashville, the members were escorted through the stately buildings and beautiful grounds adjacent, to their complete satisfaction. The return trip was enlivened by an elegant lunch, which was greatly enjoyed. Toasts were offered upon the general subject of "Our Hobbies," President Richards presiding and the following gentlemen responding: Drs. W. J. Morrison, Thomas P. Hinman, and William Crenshaw.

THIRD DAY, THURSDAY, JULY 4.

The Association was convened pursuant to adjournment, and next in order came the report of the committee who were appointed to inquire into and report upon the alleged unprofessional conduct of certain members. Charges had been preferred against the following: Drs. G. C. Sandusky, W. M. Slack, and A. K. Sudduth. The committee reported that after a careful weighing of the testimony in the above cases, they would recommend that the charges against Drs. Sandusky and Slack be withdrawn, but that, those against Dr. A. K. Sudduth being sustained, he be expelled as a member of this Association. The report was adopted.

Dr. R. B. Lees, of Nashville, next read a paper upon "The Commencement, Growth, and Eruption of the Deciduous Teeth." Discussed by Drs. J. M. Masters, Henry W. Morgan, U. D. Bilmeyer, A. R. Melinda, J. Y. Crawford, Thomas P. Hinman, and G. C. Sandusky.

Dr. Henry W. Morgan, of Nashville, entertained the Association by explaining the "Jackson Crib" system of regulating the teeth. His demonstration was illustrated by the exhibition of a large number of models and appliances which served to elucidate the technique of this useful method. His effort was highly appreciated.

The Committee on Necrology recommended the adoption of appropriate resolutions regarding the death of Drs. W. O. Kulp, of Indiana; J. J. R. Patrick, of Illinois; and J. U. Lee and T. E. Cabiniss, of Tennessee.

The following new members were elected: Drs. H. P. Huddleston, of Maryville; J. M. Miller, of Dyersburg; J. M. Graham, of Tullahoma; B. L. Davidson, of Decherd; and M. H. Emory, of Lenoir City.

The following resolutions were passed:

That the American and Southern Dental Associations be requested to take some action with reference to the printing and distributing of suitable literature on the diseases of the oral cavity among the school-teachers of the United States; and that a copy of the resolutions on that subject passed by this Association be transmitted to them; and that the representatives of this Association who are attending these meetings be requested to urge them on the subject.

That the President appoint a committee of fifteen—five from each grand division of the State—whose duty it shall be to see in person, or by personal correspondence, and solicit every registered dentist in this State to be present at our next annual meeting. That it be made the duty of the Secretary to notify them, and that he be requested to furnish to them a complete list of all the dentists in the State.

Dr. L. G. Noel, of Nashville, offered the following resolutions, which were adopted:

Resolved, That this Society, appreciating the life and labors of Chapin A. Harris, would gladly lend its aid to raise a fund to perpetuate his memory;

and would not only vote the bestowal of a sum from its treasury to this end, but would urge its members to contribute individually, *provided* that the idea be enlarged to comprehend the erection of a building to be known as the "Chapin A. Harris Dental Museum."

Resolved, That we instruct our delegates to the National Societies to present this idea, to urge the collection of a fund for this purpose, to be offered first to the city of Baltimore, with the proviso that its citizens shall offer, free of cost, a suitable lot for this purpose; and in the event of a failure to secure such gift from Baltimore, that the offer be made some other city. Said building to be used as a dental museum, library, meeting place for dental societies, and for any other purpose that its Board of Trust may devote it to, within the range of restrictions hereinafter to be provided.

The following officers were elected for the ensuing year: Dr. B. D. Brabson, of Knoxville, President; Dr. R. B. Lees, of Nashville, First Vice President; Dr. J. M. Millen, of Dyersburg, Second Vice President; Dr. P. D. Houston, of Lewisburg, Recording Secretary; Dr. H. E. Beach, of Clarksville, Treasurer. Executive Committee: Drs. J. Y. Crawford, D. R. Stubblefield, and J. A. Dale.

The Association adjourned, to meet in Nashville May 1 to 5, 1896, inclusive. P. D. Houston, *Recording Secretary.*

THE NATIONAL ARMY MEDICAL MUSEUM AND LIBRARY ADOPTED.

At the late meeting of the American Dental Association the following important resolutions were adopted:

Resolved, That this Association formally adopts the Army Medical Museum and Library as the National Museum and Library of the dental profession of the United States.

Resolved, That a committee of five be appointed by the Chair to coöperate with the Army Medical Museum and Library managers in enriching its stores of dental literature and museum specimens, especially appealing to dental societies and individual members of the dental profession for material assistance.

The following committee was appointed to take charge of this matter: Drs. William Donnally, of Washington, D. C.; J. Taft, of Cincinnati, O.; H. J. McKellops, of St. Louis, Mo.; Frank Abbott, of New York City; and Henry W. Morgan, of Nashville, Tenn.

Associations. . . . .

SOUTHERN DENTAL ASSOCIATION.

To the DENTAL HEADLIGHT.

THE next annual meeting of the Southern Dental Association will be held in Atlanta, Ga., commencing the first Tuesday in November. Arrangements are being made for the greatest meeting in the history of the Association. The Cotton States and International Exposition will be in progress, and railroad rates will be very low. All friends will be given a hearty welcome.

Yours fraternally. E. P. BEADLES, *Cor. Sec.*

COMMITTEES.

Officers of the Association.—H. E. Beach, Clarksville, Tenn., President; J. S. Thompson, Atlanta, Ga., First Vice President; L. P. Dotterer, Charleston, S. C., Second Vice President; R. D. Seals, Fort Smith, Ark., Third Vice President; H. A. Lowrance, Athens, Ga., Treasurer; E. P. Beadles, Danville, Va., Corresponding Secretary; S. W. Foster, Atlanta, Ga., Recording Secretary.

Committee on Arrangements.—Frank Holland, Atlanta, Ga., Chairman; C. T. Brockett, Atlanta, Ga.; J. A. Thornton, Atlanta, Ga.

Committee on Operative Dentistry.—W. J. Barton, Paris, Tex., Chairman; W. T. Arrington, Memphis, Tenn.; E. Wagner, Montgomery, Ala.; R. A. Bullington, Memphis, Tenn.; J. Rollo Knapp, New Orleans, La.; U. D. Billmeyer, Chattanooga, Tenn.; William Crenshaw, Atlanta, Ga.

Committee on Prosthetic Dentistry.—R. R. Freeman, Nashville, Tenn., Chairman; R. K. Luckie, Holly Springs, Miss.; C. L. Alexander, Charlotte, N. C.; J. R. Dodge, Douglass, Ga.; George Evans, New York, N. Y.; W. H. Marshall, Oxford, Miss.; W. G. Browne, Atlanta, Ga.

Committee on Dental Education.—Gordon White, Nashville, Tenn., Chairman; M. F. Finley, Washington, D. C.; W. J. Boozer, Columbia, S. C.; D. N. Rust, Alexandria, Va.; W. E. Walker, Bay St. Louis, Miss.; G. M. Rousseau, Montgomery, Ala.; A. W. Harlan, Chicago, Ill.

Committee on Hygiene.—J. H. Durham, Wilmington, N. C., Chairman; B. D. Brabson, Knoxville, Tenn.; L. M. Cowardin, Richmond, Va.; W. J. Morrison, Nashville, Tenn.; T. M. Hunter, Fayetteville, N. C.; J. N. Jones, Jacksonville, Fla.; C. L. Stockton, Newark, N. J.

Committee on Pathology and Therapeutics.—T. H. Parramore, Hampton, Va., Chairman; I. N. Carr, Tarboro, N. C.; G. J. Friedrichs, New Orleans, La.; E. G. Quattlebaum, Columbia, S. C.; J. C. Story, Dallas, Tex.; J. C. Wilkerson, Selma, Ala.; J. S. Marshall, Chicago, Ill.

Committee on Histology and Microscopy.—A. G. Friedrichs, New Orleans, La., Chairman; J. Taft, Cincinnati, O.; C. V. Rosser, Atlanta, Ga.; James Chace, Ocala, Fla.; E. S. Chisholm, St. Louis, Mo.; J. H. Harris, Baltimore, Md.; W. C. Klatte, Charleston, S. C.

Committee on Chemistry.—L. D. Carpenter, Atlanta, Ga., Chairman; A. A. Dillehay, Meridian, Miss.; S. P. Sharp, Knoxville, Tenn.; R. C. Young, Anniston, Ala.; L. Augspath, Little Rock, Ark.; Morgan Adams, Sardis, Miss.; D. R. Stubblefield, Nashville, Tenn.

Committee on Literature and Voluntary Essays.—M. C. Marshall, Little Rock, Ark., Chairman; W. W. H. Thackston, Farmville, Va.; G. F. S. Wright, Georgetown, S. C.; Francis Peabody, Louisville, Ky.; Henry W. Morgan, Nashville, Tenn.; E. L. Hunter, Enfield, N. C.; W. H. Cook, Denton, Tex.

Committee on Publication.—S. W. Foster, Atlanta, Ga., Chairman, *ex officio;* L. G. Noel, Nashville, Tenn.; B. H. Catching, Atlanta, Ga.

Committee on Appliances and Improvements.—H. J. McKellops, St. Louis, Mo., Chairman; George Eubank, Birmingham, Ala.; C. S. Staples, Sherman, Tex.; F. H. McAnnally, Jasper, Ala.; W. T. Martin, Yazoo City, Miss.; C. Still, New York, N. Y.; I. N. Wills, Savannah, Ga.

Master of Clinics and Chairman of Clinic Committee.—L. P. Dotterer, Charleston, S. C.

Assistant and Secretary of Clinics.—T. P. Hinman, Atlanta, Ga.

THE NATIONAL ASSOCIATION OF DENTAL FACULTIES.

DR. S. H. GUILFORD, Philadelphia, President; Dr. Louis Ottofy, Chicago, Secretary; Dr. Henry W. Morgan, Nashville, Treasurer; Executive Committee: Dr. J. Taft, Cincinnati; Dr. Thomas Fillebrown, Boston; Dr. B. Holly Smith, Baltimore. Ad Interim Committee: Dr. Truman W. Brophy, Chicago; Dr. A. H. Smith, Cincinnati; A. O. Hunt, Iowa City, Ia.

NATIONAL SCHOOL OF DENTAL TECHNICS.

T. E. Weeks, Minneapolis, President; S. H. Guilford, Philadelphia, Vice President; J. H. Stephan, Cleveland, Secretary-Treasurer. Board of Control: Henry W. Morgan, Nashville; N. S. Hoff, Ann Arbor; D. M. Cattell, Chicago.

THE AMERICAN DENTAL ASSOCIATION.

J. Y. Crawford, Nashville, Tenn., President; James McManus, Hartford, Conn., First Vice President; Thomas Fillebrown, Boston, Mass., Second Vice President; George H. Cushing, Chicago, Ill., Recording Secretary; Emma Eames Chase, St. Louis, Mo , Corresponding Secretary; Henry W. Morgan, Nashville, Tenn., Treasurer. Executive Committee: J. N. Crouse, Chicago; Louis Ottofy, Chicago; and T. H. Jackson, New York City.

The place of next meeting, Saratoga Springs, N. Y., the first Tuesday in August, 1896.

TENNESSEE DENTAL ASSOCIATION.

B. D. Brabson, Knoxville, President; R. B. Lees, Nashville, First Vice President; J. M. Millen, Dyersburg, Second Vice President; P. D. Houston, Lewisburg, Recording Secretary; H. E. Beach, Clarksville, Treasurer. Executive Committee: J. Y. Crawford, D. R. Stubblefield, J. A. Dale, Nashville.

SIR JOHN TOMES, F.R.C.S., F.R.S., L.D.S.

The world of dentistry will learn with deep regret of the death of Sir John Tomes, which occurred at his house in Caterham Valley, Surrey, England, July 29. Easily the foremost figure in the development of the science and art of dentistry in the United Kingdom from about 1845 to the time of his retirement a few years since, John Tomes was one of the great leaders in the progress of modern dental evolution. His name is inscribed indelibly upon its history. An account of his life and services will appear in a later number.—*Dental Cosmos.*

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